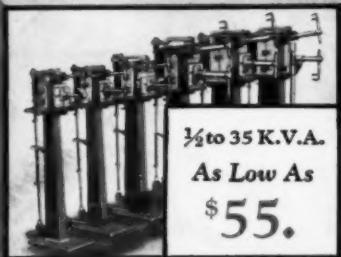
Hitchcock's Machine Tool Blue Book

DECEMBER, 1931 TWENTY-SIXTH YEAR

EISLER ELECTRIC CORPORATION
SPEED WELDERS

Now . . .
A Size for Every Need
SPEED
SPOT WELDERS



½ to 35 K.V.A.
As Low As
$55.

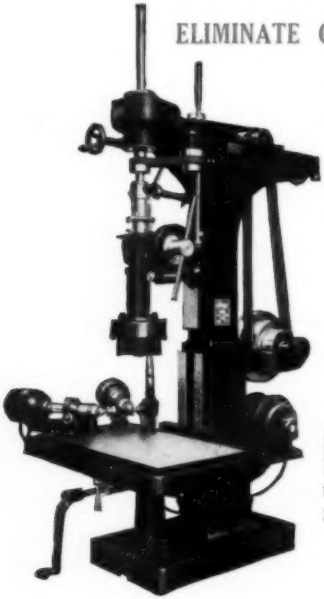
OVER 20,000 IN USE
Speed Spot Welding eliminates the use of screws, bolts, rivets, brazing or soldering
Submit Samples for Production Estimates and Details
EISLER ELECTRIC
763 S. 13th Street NEWARK, N. J.
Distributor and Dealer Connections Desired

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO

NOW IS THE TIME

TO PLAN FOR THE FUTURE

A lot of things can be done to effect economies



ELIMINATE OLD EQUIPMENT

NEWER AND BETTER TOOLS SAVE MUCH AND BRING YOU PROFITS

Let us show you how you can get two holes at former cost of one.

"EVERYTHING IN GOOD DRILLING"

THE AVEY DRILLING MACHINE CO.

CINCINNATI, OHIO

Hitchcock's
Machine Tool Blue Book

Selected Circulation — 25,500 Monthly

DECEMBER, 1931 — TWENTY-SIXTH YEAR

ELIMINATE WASTE

If in the Factory, Why Not in Advertising?

It is one of the easiest things in the world to spend more money and secure less practical advertising than is afforded by the "Blue Book."

No service covers the best plants more thoroughly; no service has proven more effective; but you can pay a whole lot more and get less in real values.

The "Blue Book" enables the manufacturer of metal-working machines to eliminate advertising waste, because it gives him the maximum of honest-to-goodness sales-building service per dollar of cost.

It offers splendid advertising opportunities for 1932.

Ask the publishers

Published By

Hitchcock Publishing Co.

508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements

FOOTBURT

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

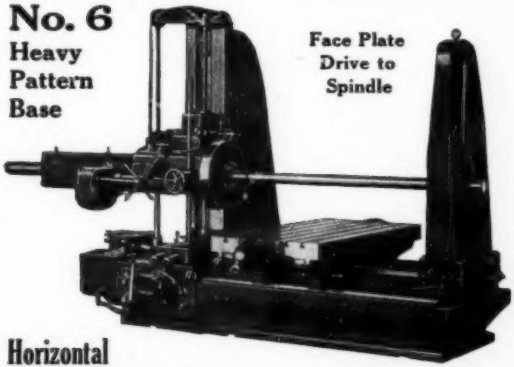
Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

The New Improved
DEFIANCE

No. 6
Heavy Pattern Base



Horizontal
Boring, Milling, Drilling and Tapping Machine

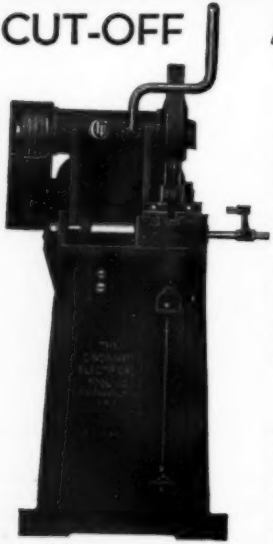
The Defiance Line of Horizontal Boring Mills embodies many special features including independent rapid traverse to head and platen in all directions, moving 84" per minute; thoroughly enclosed head; forced feed lubrication; centralized control; unit construction of head, feed and speed boxes, and many more efficient aids to production. Simplicity, great strength and ample power enable you to handle a wide range of work with profit.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines. Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works
Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and Special Woodworking Machinery

The Cincinnati HIGH SPEED CUT-OFF MACHINE



Combines SPEED with SAFETY

THE CINCINNATI cuts steel alloys, brass, aluminum, copper, fibrous materials, etc., of any size or shape up to 2¼" inclusive. Makes cuts, straight or angle, easily and quickly up to 45 degrees, using same vise for various cuts. 12 or 14" diameter abrasive wheels operate at a peripherel speed of 16,000 S.F.M. Fully guarded.

Check this chart!

A chart, showing the remarkably short time needed to cut various alloys and metals, is yours on request. You will also be surprised at the ***number*** of cuts the machine will make. Send for these interesting figures and compare them with your own records.

BUILDERS OF

Ball Bearing
Electric Drills
Screw Drivers
Nut Setters
Tappers
Valve Grinders
Tool Post Grinders
Floor Buffers
Bench and
Floor Grinders

We'll gladly forward a copy of this Chart and Bulletin giving complete details upon your request

THE CINCINNATI
ELECTRICAL TOOL CO.
2700 Madison Road, Cincinnati, O.

"A SECOND OR TWO—AND THE CUT IS THROUGH"

STANDARDIZE YOUR FACTORY

Grinding Attachment for Tungsten Carbide Tools

Graduated radial member insures precision in grinding tool bits. Sliding knuckle for wheel wear. 14 x 4 x 1½" cup wheels. 1 H. P. and 3 H. P.

Combination Grinder & Ring Wheel Grinder

This 5 H. P. grinder is fitted with an 18" ring wheel chuck. Three SKF ball bearings. Special ball thrust bearing to take care of end thrust of the ring wheel.

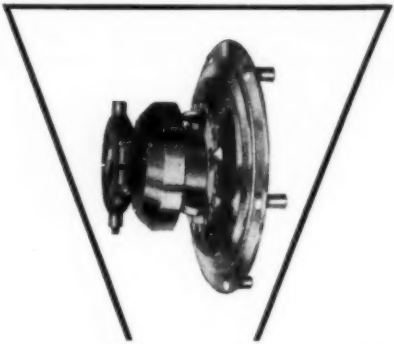
General Electric 40° motor and push button control. High grade nickel steel armature shaft. Sizes 3, 5 and 7½ H. P.

The Standard Electrical Tool Co.

1952 West 8th St., Cincinnati, Ohio

Standardize with Standard Tools

The CONWAY DISC
IS A SPLENDID CLUTCH



Here Are Some Reasons Why:

Easy Engagement
Instant Release
Dragfree Idling
Abundance of Power

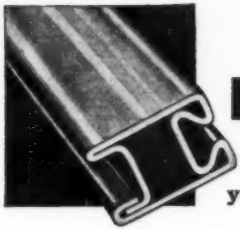
It's called "the last word in friction clutches"—not our slogan; users invented it.

Unmatched in simplicity, there are dozen less parts to go out of order and hold up an operation. Everything enclosed; once installed you could forget it, but few users do. It's hard to ignore perfection!

Send us your specifications for recommendations. Or ask for Catalog P-20. And our new Bulletin E-8, on the new Conway Full Floating Expansion Clutch, is ready.

THE CONWAY CLUTCH CO.

1541 Queen City Ave., :-: Cincinnati, Ohio



IF *your product fits this picture—*

you are paying too much to produce it

IF you make or buy mouldings, tubing, channels, or other similar sections; if they are formed from metal, or partially from metal, strip or sheet, in any gauge; if they are at present being formed by slow press-brake methods—***they are costing too much!***

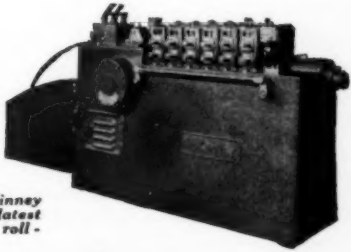
McKinney Roll Forming Machines have made possible surprising new production speeds and lowered costs even on many products which were not thought possible to roll-form.

The steel windshield tubing shown above is roll-formed from coil stock at 100 feet per minute. Other sections can be formed at speeds up to 650 feet per minute. New McKinney developments include automatic cut-offs for cutting stock to any desired length either before or after forming.

McKINNEY ROLL FORMING MACHINES

The McKinney Tool & Mfg. Co.

1684 Arabella Road, Cleveland, Ohio



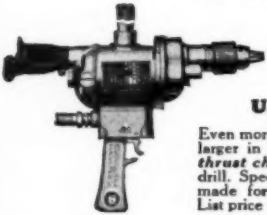
Write for new McKinney bulletin showing latest developments in roll-forming.

"The Good Mechanic's Choice"

SINCE 1897

U. S. ¼" REGULAR—

Outpulls and outlasts any drill its size in the world! Easiest to service—requires the least. Easiest to handle. Speed, 2000 r. p. m. under load, ***not idling only.*** List price only..... **$30.**



U. S. ½" SPECIAL—

Even more powerful than other drills much larger in size. You get ***Timken double thrust chuck spindle bearings*** with this drill. Speed, 450 r. p. m. under load. Finest made for all purpose work. List price only..... **$48.**

U. S. ⅝" HEAVY DUTY—

Positively the most powerful drill of its size made. Most rugged—dependable—durable—economical. ***Timken double thrust bearings*** in chuck spindle. Chrome-nickel alloy steel gears, hardened, running in grease. Cool. Quiet. 400 r.p.m. under load. List price only ..... **$68.**

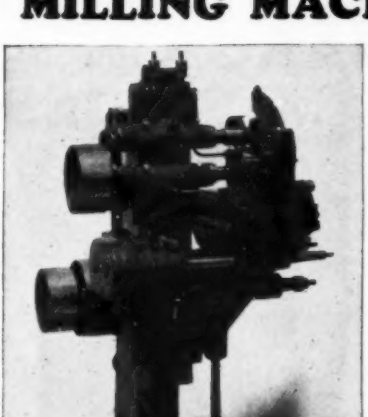
Ask Your Distributor

The United States Electrical Tool Co.

2461 W. Sixth St., Dept. D. Cincinnati, Ohio

Canadian Division—MAPLE LEAF ELECTRIC TOOLS, Ltd.—Toronto

"SUPERIOR"
Double Spindle Automatic
MILLING MACHINE



Allows various designs of fixtures to be used in order to handle the different kinds of work to advantage

■

Also made with Single Spindle

■

SUPERIOR Double Spindle Automatic Milling Machine is shown with special fixture for holding piston rings while sawing them apart. Work is clamped and unclamped by movement of table Dwell of table can be regulated so operator has ample time to load and unload. Table feed can be disengaged at any time and table and fixture operated by hand for setting up a job. Graduated dials are provided for adjusting screws.

Spindles are hardened and ground and run in bronze bearings in a bath of oil. All gears are hardened steel. Main drive and other shafts mounted on anti-friction bearings. Spindle speeds changed by pulleys and feed of table through change gears. This machine is designed for rapid, accurate production and can be set-up and changed from one job to another very quickly. ***Write Today for Complete Information.***

Superior Machine & Engineering Co.

1920 Ferry Park, Detroit, Mich.

SAVE *at These*

BARGAIN PRICES

new Steel Benches
With Drawers

Made of Heavy Gauge Finished Steel

Top..... 27"x27"
Height.....33"
Drawer.....14x20x5"
Weight.....80 lbs.
Lacquered Olive Green

While they last

$7.50 EACH (without vise)

$8.50 (with casters)

F. O .B. Providence, R. I.

These Benches formerly Sold for $20.00 each.

Stackbin Corporation

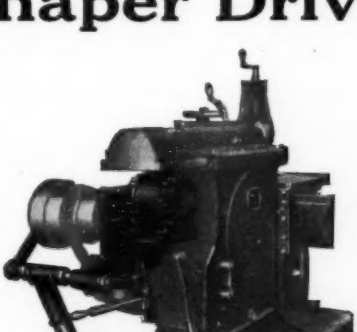
Pearl & Rice Street, Providence, R. I.

Please ship.....Benches with Casters / without Casters

Name .....

Address .....

The Cullman Shaper Drive



Motorize your cone pulley Shapers, Lathes and Milling Machines with Cullman Drives. Made in ½ to 7½ H. P. sizes Easy to install, bolts to your machine.

Send for literature

Cullman Wheel Company
1359 Altgeld St., Chicago, Ill.

Sprockets—Speed Reducers

THE MARVEL

AUTOMATIC HACK SAW

SAW FRAME—All shafts and important bearings are BALL BEARING

Entirely Automatic—Feeds the Bar—Produces Duplicate Pieces at Tremendous Cutting Speed

THIS NEW Heavy Duty, Automatic High Speed Hack Saw will replace from six to eight ordinary hack saws on production work, making possible a great saving in time, floor space, labor and expenses. Feeds bars to any length from ⅛ in. to 26 in. and will cut 4 sq. in. per minute, floor to floor, in mild steel and 2 sq. in per minute in annealed high speed steel. Write for complete specifications and prices.

TWO SIZES { **No. 6A Capacity 6"x6"**
No. 9A Capacity 10"x10"

ARMSTRONG-BLUM MFG. CO.

341 N. Francisco Ave., CHICAGO, ILL.

Wittek Universal Die Sawing and Filing Machine

has many new and improved features

This machine has three speeds with adjustable stroke from 1¾" to 5½". Universal saw and file holders hold any size saw or file. It has roller saw guides above and under the table to guide the saw for accurate sawing. The table tilts 15 degree angle in any direction. Has detachable screw feed, and many other features.

Made in Bench or Floor Models, with Motor or Belt Drive. Price $285.00 and up.

Ask your Machinery Dealer or write us for Bulletin FH.

WITTEK MANUFACTURING CO.

Dept. H. 4307 West 24th Place, Chicago, Ill.

SAFE VALVE COUPLINGS

Quick As Wink

The quickest--safest--most reliable hose couplings and valves on the market

3 YEARS GUARANTEE

Positive control of the air anywhere between the compressor and tool. Push valve sleeve forward--air is on. Pull sleeve back--air is off. Cannot be uncoupled unless air is off. No leaks. No sticking. No trouble. All steel construction. Major parts of "Stainless." Stand abuse and operate under all conditions.

Time and Money savers wherever used. Ask for information and prices.

Quick As Wink
CUSHION
ABRASIVE
WHEELS

THE MODERN WAY TO BUFF & POLISH

C. B. HUNT & SON

SALEM, OHIO

The KELLERFLEX

The KELLERFLEX machine when used with burs or rotary files will give most satisfactory results. There are various speeds to enable a 1/8-in. bur to be used as effectively as a 1-in. bur. This machine and equipment will prove indispensable for removing solder on sheet metal or weld marks on structural iron, castings, etc. They also may be used in the foundry for trimming and cleaning up bronze and aluminum castings, as well as finishing of patterns.

The illustration shows the use of a bur in removing imperfections on a bronze casting.

Let us send you our catalog and recommendations both for machine and burs as adapted to your individual needs.

KVE

THE PRATT & WHITNEY COMPANY

Keller Division, 58-A Washington St., Brooklyn, N. Y.

STOCK AT CHICAGO AND BROOKLYN

Magazine-Fed Screw Driving—PAYS

Ask Us to PROVE It!

REYNOLDS Automatic Screw Driving Machines, with the Magazine Feed, drive screws so economically that many users find they pay for themselves three or four times a year. Drive screws of practically every kind—anything that can be magazined—and do it so perfectly users are usually able to reduce their screw sizes.

Send us the dimensions over all of your work, together with length and gauge of screws used—and we'll forward the proof to you!

The Reynolds Machine Company
Dept. H. H. Massillon, Ohio

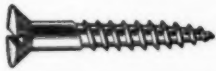
"THE MODERN WAY TO DRIVE SCREWS"

—Stands for ELCO SCREWS

ELCO SCREWS

FOR

Accurate Fit, Uniform High Quality
Prompt Service



Standard Sizes Shipped from Stock in any desired quantity

MACHINE SCREWS
MACHINE SCREW NUTS
CAP SCREWS WOOD SCREWS
PIPE PLUGS LAG SCREWS

All inquiries receive prompt, intelligent attention

ELCO TOOL & SCREW CORPORATION

1808 Broadway, Rockford, Ill.

"It Pays to Use Good Screws"

Machine Tool Orders

And a Little History

The drop from the feast period of 1929 has been so drastic that we are apt to forget our past experience.

Yet a competent authority places machine tool orders for October, 1931, at 71 per cent in excess of the low point in 1921.

The gain by the end of 1922 was nearly 300 per cent over the low point of the previous year, and by the early part of 1923 the gain rose to over 500 per cent.

With the exception of part of 1924, a fair demand for machine tools continued until the latter part of 1927, when it increased quite rapidly, with only a few minor set-backs, until it reached the peak period of 1929.

Each succeeding period of prosperity is often greater than any like period that ever has gone before. And if history repeats itself, the year 1932 should be the beginning of the most prosperous period the world has ever seen.

It is when business is trending upward—when factories are either buying or planning their purchases—that advertising pays best in present and future sales. And an advertisement in the "Blue Book," beginning in January, 1932, will carry your message through this important period to the best trade the country over—to those to whom you must look for orders—at a lower cost for the practical service rendered than any other publication on earth.

It is not only worth trying; it is too good to pass by, and especially so for the cost.

KRW *"Bench Type"*

ARBOR PRESS

No. 37D

$28.50

F.O.B. FACTORY
ARCADE, N. Y.

Shipping Weight
140 lbs.

Write for special circular, just off the press, covering K R W Hydraulic Arbor Presses, air and oil operated.

Every shop needs one of these presses to handle hundreds of jobs now done with vises and sledge hammers. They soon pay for themselves in time and labor saved.

The K R W "Bench Type" Arbor Press is oversize in every particular. The throat is extra deep, taking work up to 13 inches in diameter. The ram is 1½x1½x17 inches. Largest arbor is 1⅝ inches. The height is 22 inches. Can be conveniently mounted on end of work bench, as it takes up a space of only 8x20 inches.

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPT.
126 Liberty St., New York

WEST COAST BRANCH
647 Mateo St., Los Angeles

Cut Costs and Turn Out BETTER Work with the

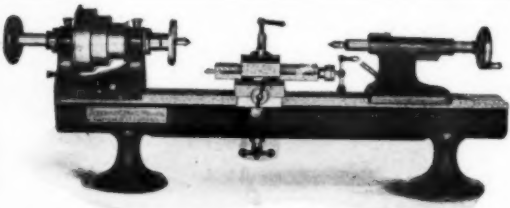
COLONIAL Broach Sharpener

Designed especially to sharpen broaches, the COLONIAL turns out the equivalent of a NEW tool, grinding the teeth and hard-to-get-at undercut more correctly than any other machine can do. And it does this with an approximate cost saving of *two-thirds*—and an almost equal saving in time! Quickly pays for itself—lengthens the life of your expensive broaches.

Write Today for Complete Information

COLONIAL BROACH COMPANY

147 Jos. Campau Ave., Detroit, Mich.



WADE PRECISION BENCH LATHES

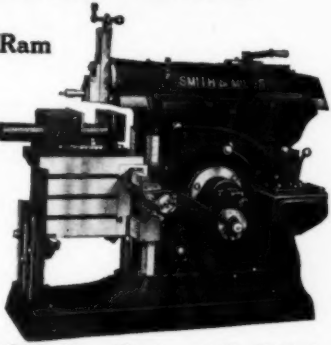
The economy of these lathes is to perform work, within their capacity, ***to Better Advantage, More Accurately, at Lower Initial Cost*** than on larger and more expensive machines. In fact, for some classes of work there is no substitute for the fine accuracy and convenient operation obtained on Wade Bench Lathes.

Let us know your problems

THE WADE TOOL CO., Waltham, Mass.

SHAPERS

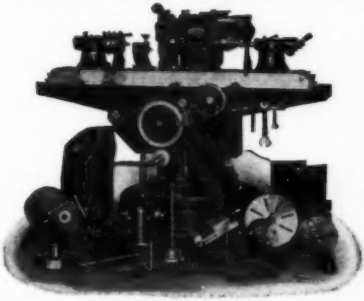
"V" Type Ram



12", 14", 16", 20", 25" Gear Box single pulley or motor drive, also 16", 20", 25" B. G. cone drive with belt shifter. 32" B. G. all geared single pulley or motor drive, all sizes crank type.

The Smith & Mills Co., Cincinnati, O., U.S.A.

SIX Grinders In ONE



12"x36" Thompson Universal Grinder

Does every grinding operation required in the machine shop. Lowest cost work for plain, surface, die, cutter, edge and internal grinding. All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

Let us send you the Illustrated Booklet today!

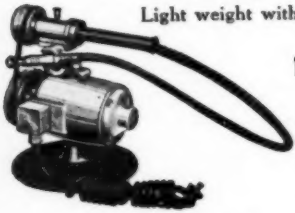
The Thompson Grinder Company

1534 West Main St., Springfield, Ohio

Mall

TRADE MARK

HEAVY DUTY—HIGH SPEED
Die Sinking Machines



Light weight with ABUNDANT POWER

Use

THE MALL METHOD

for

Cleaning— Scraping—
Finishing— Sawing—
Drilling— Filing—

Speed ranges 300 to 21,000 r. p. m.

Detailed Catalog on Request

Mall Tool Company, 7740 So. Chicago Ave., Chicago, Illinois

Type MSA—⅓ H. P.

Strand

FULL BALL BEARING MACHINE

⅓ H.P.—Three Speeds

Other Types In

Vertical-Direct Drive

And

Three Speed Horizontal Types ⅛ to 2 H. P.

Send For 56-Page Catalog No. 25

N. A. STRAND & CO.
5001 N. Lincoln St., CHICAGO

Sheldon Arbor Presses

Sheldon Milling Machine Vises.

Sheldon Drill Press and Shaper Vises.

Sheldon 90° Angle Plates.

Write for illustrated price list.

Sheldon Machine Company

Railway Exchange Bldg. -:- Chicago, Ill.

ATLAS PRESS CO.

KALAMAZOO, MICH.

Makers of fine Arbor Presses for 25 years

Illustrated is our No. 55 Power Press designed especially for production work where speed is essential. At 10 tons pressure No. 55 has a ram travel of 27 feet per minute.

Write for descriptive Bulletin on this and other types

Our Big Little Business

America has the reputation of being the home of "big business." We are inclined to overlook the collective importance of our little businesses.

Bankers as well as purveyors of merchandise, materials and machinery like to do business with General Motors, General Foods, American Tel. and Tel. and U. S. Steel. They like to serve the big fellows who do from a million to a billion dollars worth of business a year.

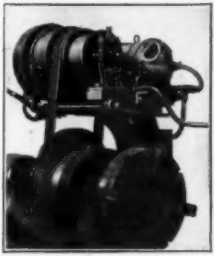
But they are not so keen about doing business with John Jones or Harry Smith whose volumes, put together for a year, would be a small day's business for one of the big fellows.

We must take steps to encourage the Jones and the Smiths of business, according to the President's Organization on Unemployment Relief. For these little fellows, and medium sized ones, who each do from five thousand dollars worth to a million dollars worth of business per year, outnumber the big fellows about twenty to one. And collectively, they ordinarily employ nearly half of our industrial and business workers.

The little businesses of America, which are in the aggregate a very big business, feel the credit pinch severely. So long as this half of America's employers are thus handicapped, we cannot expect employment to become normal.

To overcome this serious drawback, the unemployment relief organization suggests the formation of a credit pool somewhat similar to the National Credit Corporation which can do what the latter is not in position to do, namely to release credit to our smaller distributors and producers "whose number is legion, and whose aggregate contributions to the unemployment situation would be very great, if made effective."

Power Savings of 20 to 70%



If You Use

H & Z

Individual Motorization

You will be pleasantly surprised at the savings effected by making your machines individual motor driven units. Not only is there a great saving in power used, but the efficiency of the entire plant is increased from 10 to 50%, and greater safety is promoted. H & Z Drives are adaptable to all kinds of Machine Tools and other machinery.

Write for Illustrated Catalog No. M 101.
For Textile Motorization Catalog No. 3

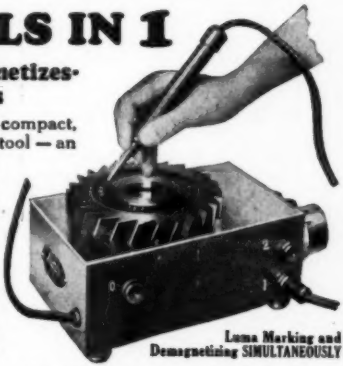
HERTZLER & ZOOK CO., Box 101 BELLEVILLE, PA.

---

3 TOOLS IN 1

Etches-Demagnetizes-Anneals

THE LUMA is a compact, handy, portable tool—an electric pencil for marking hardened and ground steel—a thorough demagnetizer—a carbon point for light annealing and soldering. Easy to use—plugs in any light socket. Effects surprising savings.



Luma Marking and Demagnetizing SIMULTANEOUSLY

Write for full data—including 5 day FREE TRIAL OFFER

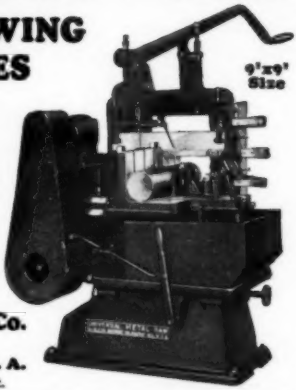
LUMA ELECTRIC EQUIPMENT CO.

DEPT. H.—Main P. O. Box No. 132—TOLEDO, OHIO

PEERLESS

UNIVERSAL HIGH SPEED

METAL SAWING MACHINES

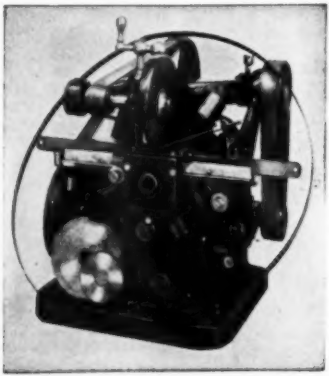


9"x9" Size

Fast, accurate production Metal Sawing Machines for machine steels, tool steels, stainless steels and high speed steels as well as all other classes of cut-off work. Made in three sizes—6"x6", 9" x 9", 13" x 13". Three Speeds. Belt or motor drive. Arrangements for motor, standard equipment.

"If it's a cut-off proposition—It's for PEERLESS"

Peerless Machine Co.
1619 Racine St.,
RACINE, WIS., U. S. A.
New York Office: 15 Warren St.



3 in 1

Combination Saw Grinder

for Hacks, Bands and Circular Saws

With this grinder you can save 75 to 85% of your hack saw costs—or if you wish, send us a couple of your dull hack saws and we will grind and return them—no charge.

Write for Circular

J.E. PORTER MACHINE CO.

1872 Jefferson St., Muskegon, Mich.

Townsend Centrifugal Multi-Blow Riveters

THE ONLY MACHINE THAT IMITATES HAND RIVETING IN EVERY WAY.

NUMEROUS TYPES FOR ALL KINDS OF WORK.

Round and Flat heads, hollow and cheek rivets from .008" to 5/16" without distortion or breaking of fragile material. In places inaccessible by any other method.

H. P. Townsend Mfg. Co.

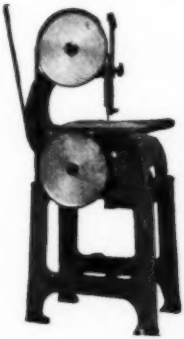
Hartford, Conn.

Foreign Representatives:

G. H. Alexander Machinery Ltd., Birmingham, England
Andrews & George Co., Tokyo, Japan
Fenwick Freres, Paris, France

The "JARVIS" Bench Band Saw

For Metal Cutting Operations



The "Jarvis" Bench Band Saw cuts metals—straight, curved or bevel. It is motor driven, operates from a lamp socket and is vibrationless. Ball bearing disc wheels, worm drive.

12" size cuts up to 1½" cold rolled steel. 16" size cuts up to 2" cold steel. Also made for cutting soft metals, Bakelite fibre, transite, wood, etc.

Details gladly sent upon request.

BENJ. E. JARVIS, Inc.

NEWARK, NEW JERSEY

Walls Sales Corp., Agents
96 Warren St., New York City

T. H. L. Punches

Insure Continuous and Profitable Production

Because they are made of the right quality of tool steel.

Because they are hardened with every care.

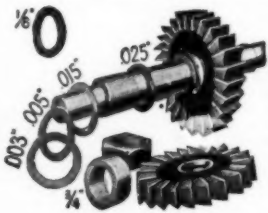
Because all our experience of 40 years is centered in making them accurate, rugged and dependable.

Large stock of regular sizes
Special sizes quickly made

T. H. Lewthwaite Machine Co.
311 East 47th St., *(Est. '890)* **New York City**

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: ⅜, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞, 2, 2¼, 2½, 3, 3½ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

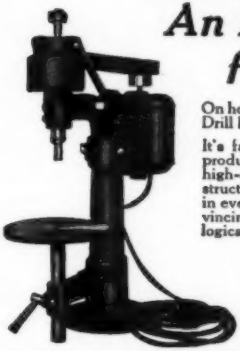
Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

BURKE

An Efficient Drill for the Bench



On holes up to ⅜", the Burke No. 222 Bench Drill Press is a really outstanding machine.

It's fast, vibrationless and accurate; a real production tool that turns out a quantity of high-class work at low cost per hole. Construction is of the sturdiest; design modern in every detail. Our catalog contains convincing reasons why the No. 222 is the logical drill for your bench.

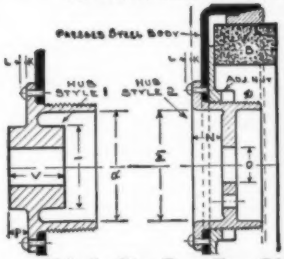
Write for a copy today.

The Burke Machine Tool Co.
297 E. 16th St.,
CONNEAUT, OHIO, U. S. A.

GRINDER

CHUCKS

Hold Solid Abrasive Rings. Nine Sizes, 10" to 30" diameter
Pressed Steel—Safe—Light—Simple—4000 in Use



Hubs for Disc, Face, Floor, Edge and Special Grinders
Send for Circulars

THE GRAHAM MFG. CO., 70 Willard Ave. PROVIDENCE, R. I.

Let the BLUE BOOK be Your Messenger

There are three essentials to good advertising—

1. **The article advertised must have real merit.**
2. **The copy describing it should be clear and concise.**
3. **The advertising message should be delivered to the maximum number of possible buyers.**

Hitchcock's Machine Tool Blue Book will deliver your message to more responsible users and buyers of machine tools, including automotive and other large manufacturing plants, railway mechanical officials, etc., than any other publication on earth. If your product is right and your copy is right, then the use of the Blue Book as your advertising medium completes a combination that is unbeatable.

The rates are most reasonable for the service; write for them.

HITCHCOCK PUBLISHING CO.
508 SOUTH DEARBORN STREET, CHICAGO, ILL.

Don't Call a Gang of Men

away from their work to do the lifting and lugging of heavy pieces, when one man and a

Canton Portable Crane and Truck

can do it more quickly, more efficiently and with greater safety. **The Canton** is made in six sizes to hoist, truck and place any load up to 6,000 lbs. in weight. Can be equipped now with the safety friction brake.

It will pay you to investigate
Write today for Booklet E-8

Canton Foundry & Machine Co.

CANTON, OHIO

New York Office: Carnegie Hall, 154 West 57th Street

TRY us on your

Difficult Riveting Job

We have solved the riveting problem for many manufacturers, who thought hand riveting was their only way out, until they investigated the "GRANT," which does their work better and at much less cost.

"GRANT" Noiseless Spinning Riveters

cover all classes of work, including awkward pieces and riveting in out-of-the-way places.

Send samples of your work for riveting and cost estimate

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

"PRO-CUN-IER"
TAPPING ATTACHMENTS

Style "E" High Speed Tapper

For only a few dollars, a **"PROCUNIER"** reversible tapping head converts your drill press into a sensitive tapping machine.

Our brand new cork clutch reversible friction tapper (illustrated), can be driven 3000 R. P. M. on many jobs.

¼" Capacity $35.00: ½" Capacity $45.00

"Pro" tappers frequently tap ¼ to ½ million holes before even the clutch is replaced.

Here's all the "Pro" steel dog clutch tappers cost complete with our new style tap holder:

No. 1—¼" Capacity; Safety $28.00; Positive $22.00
No. 2—½" Capacity; Safety $34.00; Positive $28.00
No. 3—⅝" Capacity; Safety $40.00; Positive $34.00
No. 4— 1" Capacity; Safety $52.00; Positive $46.00

Send for details and free trial offer

Procunier Safety Chuck Co.
14 S. Clinton St., Chicago, Ill.

"Carefree Service at Any Speed"
by using

EDGEMONT TYPE SF DISC CLUTCH

"Type SF" Mechanisms are furnished separate or in pulleys, sprocket and sheave blanks, extended sleeves and cut-off couplings. Made with ball bearing, roller bearing, bronze bushed and oil sleeve bearing.

Send now for literature and blue prints

The Edgemont Machine Co.
2900 Home Avenue, Dayton, Ohio

The Fact That . . .

MODEL
ULO

more than sixty machine tool manufacturers have adopted GUSHER PUMPS as standard equipment on the machines they build, is sufficient proof that GUSHERS must be better and more suitable for modern machine tools.

We kindly solicit your inquiry without obligating you in any way

GUSHER COOLANT PUMP

THE RUTHMAN MACHINERY CO.
528 East Front Street, Cincinnati, Ohio

Blower, Sprayer, Suction-cleaner

Instantly Convertible ~No Installation

This portable electric blower delivers DRY air, **free from oil,** at high velocity, yet low pressure. It safely, quickly, and efficiently cleans motors, generators, converters, shafting, overhead piping, etc. Reduces fire risk and danger of "shorts" and "burnouts."

Instantly convertible for suction-cleaning stocks, bins, auto interiors, furniture, overhead pipes, shafts, line shafting, etc, or for spraying insecticides, deodorants, paints, lacquers, etc.

Attach to any light socket. Any voltage. Less than 2¢ an hour to run. Ball bearings—no oiling. 4 models. Used by over 20,000 concerns. Fully **guaranteed** by 20 year old company, originators and largest manufacturers of portable electric blowers.

Try this blower 10 days. Then pay for it or return it at our expense.

WRITE NOW For prices and descriptive folder No. 629.

CLEMENTS MFG. CO., 629 Clements Bldg.
6650 So. Narragansett Ave., Chicago, Ill.

Ball-bearing
Clements
Cadillac

Ames Amplifying Comparator

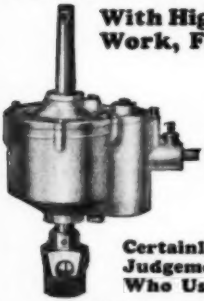
An unusually rugged and durable gauge for testing parts in quantity with speed and accuracy.

It Repeats Its Readings! Send for Special Bulletin.

B. C. Ames Co., Waltham, Mass.
Detroit Office: 902 Stephenson Bldg.

MORE PRODUCTION

With Higher Speed, Less Spoiled Work, Fatigue or Broken Taps



ETTCO

High Speed—Sensitive

TAPPING ATTACHMENT

Certainly You Can Be Guided by the Judgement of Hundreds of Factories Who Use ETTCOS.

FIVE SIZES—UP TO ONE INCH TAPS

Try Ettcos at Our Expense. We have a nice New Circular ? ?

ETTCO TOOL CO., Inc., 594 Johnson Ave., BROOKLYN, N.Y.

ARMSTRONG

TRADE MARK REG. IN U.S. PAT. OFFICE

Drop Forged Wrenches

New Design

ARMSTRONG Engineers' WRENCHES now come in new designs with lean tapering jaws that take a firm grip where other wrenches cannot reach, with longer, thinner handles that give greater purchase (leverage). They are stronger, better balanced wrenches, materially better than the finest carbon steel wrenches ever previously made. ¶ Take one of these wrenches, note its balance, design, length—the milling of its openings and its finish—then test it for strength against any other wrench. Only after such examination and test can you fully understand how handy, how strong a wrench can be. *Write for Circular*

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

308 N. Francisco Av., CHICAGO, U. S. A.

London Branch: ARMSTRONG BROS. TOOL CO. LTD. 35 Upper Thames St., London, E.C.4, England

A thorough coverage is necessary to maximum advertising results. This is a truism.

For the greatest coverage of the richest markets for machine tools and shop equipment—and at the lowest rates — concentrate your advertising in

HITCHCOCK'S
MACHINE TOOL BLUE BOOK

25,500 Copies mailed monthly

GEARS

In Stock—Immediate Delivery

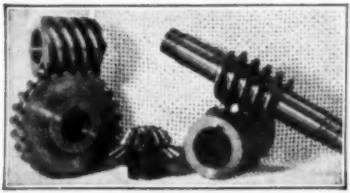
Gears, speed reducers, sprockets, thrust bearings, flexible couplings, pulleys, etc. A complete line is carried in our Chicago stock. Can also quote on special gears of any kind. Send us your blue prints and inquiries.

Write for Catalog No. 70

CHICAGO GEAR WORKS

769-773 W. Jackson Blvd., CHICAGO, ILL.

GEARS



All types and materials including ground thread worms

Massachusetts Gear & Tool Co.

36 Nashua St. Woburn Mass.

STANDARDIZATION PAYS

"NICE"
BALL BEARINGS

Thrust, Radial and Combination types carried in stock at Boston Gear Service Stations in cities from coast to coast.

Write for Catalog and address of nearest Service Station

NICE
TRADE MARK
REG. U.S. PAT. OFF.

BOSTON GEAR WORKS SALES CO.
NORTH QUINCY, MASS.

BOSTON GEARS

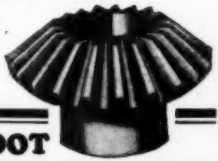
SPECIFY
CROFOOT
When You Need Gears

CROFOOT SERVICE embodies a number of factors—highest quality materials including all metals, Formica, Bakelite, etc.; the best of workmanship; careful adherance to delivery dates; moderate charges. An experienced staff of engineers is ready to aid in solving any of your gear problems, without obligation. Avail yourself of this complete service.

Send Specifications for Free Estimate

Charles E. Crofoot Gear Corp.

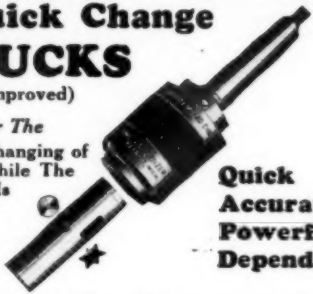
70 Central St., So. Easton, Mass.



GEARS BY CROFOOT

UTILITY-WIARD
Quick Change
CHUCKS
(Improved)

For The
Rapid Changing of Tools While The Spindle Is Turning

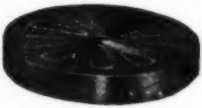


Quick
Accurate
Powerful
Dependable

The J. C. Glenzer Co.
6467 Epworth Blvd., DETROIT, MICH.

"D & W" Flat & Rotary Magnetic Chucks

Have Proved Time and Labor Savers



D. & W. Magnetic Chucks hold a great variety of iron and steel pieces for grinding, milling, planing and shaping operations. By the effective way they serve you, they soon pay for themselves. We specialize in problems dealing with the use of flat and rotary magnetic chucks. Let us investigate any question which is confronting you.

Special chucks to order. Folder and price list on request.

J. & H. Electric Co., 200 Richmond St., Providence, R. I.

To Industrial Plants

For the mutual benefit of yourselves and our advertisers, we want to be sure that the Blue Book goes, without cost, to those in your plant who can use it to good advantage.

Quite a number of you, particularly among automobile manufacturers, have sent us lists of the prominent men in your organizations who are most closely identified with the planning of your improvements and the selection or purchase of your machinery.

If you have not done this, you are earnestly requested to send us such a list of names, so that we may mail the Blue Book regularly every month to those of your own selection, without cost or obligation of any kind whatsoever. Simply tear out this page, write the names on the reverse side, and mail it to the publisher.

Our only object is to make the Blue Book the best buying and selling medium on earth between manufacturers of machine tools and shop equipment and plants such as yours.

(*See next page*)

.....,1931

HITCHCOCK PUBLISHING CO.
508 S. Dearborn St., Chicago, Ill.

Please send your Machine Tool Blue Book, without cost, to the following members of our organization, who have to do with planning the equipment of our machine shops and the selection or purchase of our machine tools and other shop requirements:

(Give both names and titles)

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It is understood that you are to use the above names as a mailing list for your Machine Tool Blue Book only, and that they will not be used for any other purpose.

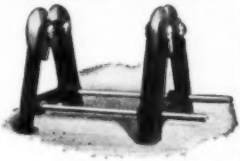
Name.....

Street No.....

City..... State.....

Anderson Ever Ready Balancing Ways

Exceedingly Sensitive



Easy to Manipulate

Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotar. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Abolish Expensive Hand Finishing

with a

Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street NEW YORK

Analysis of Circulation of

HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

(Corrected to December 1st, 1931)

To domestic concerns, and superintendents, works managers, production engineers, master-mechanics, etc., in such concerns rated at—

Exceeding $1,000,000	2,181
$500,000 to $1,000,000	1,603
$300,000 to $ 500,000	1,529
$200,000 to $ 300,000	1,367
$125,000 to $ 200,000	1,784
$ 75,000 to $ 125,000	1,985
$ 50,000 to $ 75,000	1,417
$ 20,000 to $ 50,000	2,992
$ 10,000 to $ 20,000	1,983
$ 5,000 to $ 10,000	1,625
TOTAL to Private Concerns of over $5,000	18,466
Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Electric Power Plants, Selected Foreign Importers and Users, Etc.	3,411
TOTAL to Buyers of Known Responsibility	21,877
*Concerns quoted in Dun or Bradstreet, but without Capital Rating	2,116
Concerns not yet in either Dun or Bradstreet, which includes new industries	961
Concerns rated $3,000 to $5,000	465
Miscellaneous	195
TOTAL CIRCULATION	**25,614**

*This group includes a considerable number of large concerns, and some small ones of high credit, whose capital rating is not given by either of the commercial agencies.

The Heavy Duty No. 4

HANDNIB

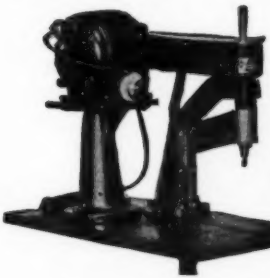
Outside or Inside Nibber, Shear, and Rod Cutter

Will Save You 90% on Templates, Trial Blanks, Sheet Metal Experimental Work

Nibbles sheet metal up to 3/16" into any shape, inside or outside. Inside nibbling depth of cut 4" from any outside edge. Shear flat stock up to 3/16", cut rods from 3/16" to 1/2" dia. Cast steel—wearing parts hardened and ground. *Write for details.*

NATIONAL MACHINE TOOL CO.
1536-B CLARK ST., RACINE, WISCONSIN

The VIM Bench Machine



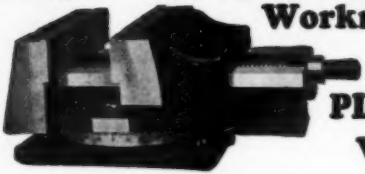
Type "C" for Screw Driving and Nut Setting

Operated by foot pedal, leaving both hands free for adjusting work in hand. It is especially designed for female help. Throat or clearance of work is 6". Screws and nuts can be driven at high speed—2000 R. P. M. bit speed—if desired. We manufacture *five different types,* for all purposes of screw driving and nut setting.

Send for circulars describing these tools

VIM ELECTRIC TOOL CO.
149 Broadway, New York, N. Y.

Superior Quality and Workmanship in PLUNKET VISES



The Square Base Shaper Vise

The Shaper Vise has graduated base and tongue in center to fit slot in table, and has holes for bolting down. In ordering this vise give size of slots in Shaper Table, also distance from center to center of slots.

10" jaws, 2¼" deep, opens 8½" **$52.00**

Our complete line includes Vises for Drill Presses, Milling Machines, Shapers and Grinders.

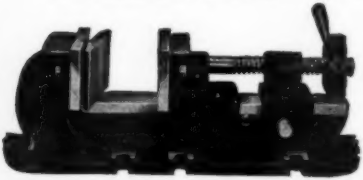
Prices are net, f. o. b. Chicago. Write for illustrated folder today. Dealers wanted in unoccupied territory.

J. E. Plunket Machine Co.

213-215 N. Ada Street, Chicago, Illinois

Gem Drill Press Vise

With Automatic, Quick-Acting, Powerful Grip



Holds Irregular Pieces Firmly

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it *the most efficient vise on the market.* Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

J. E. Martin Tool & Die Works, 528 W. State St. Springfield, O.

VANDERBEEK UNIVERSAL JOINTS

Are used in all kinds of machines where high grade Joints are needed. The very highest grade of workmanship goes into our Joints.

We specialize on Joints

for instrument work and light drive as well as airplane use. Hundreds of thousands of Vanderbeek Universal Joints are in daily use.

Write for Prices and State Your Quantities

American Tool Works, Inc.
25 High St., Hartford, Conn., U. S. A.

THE WILDER
Interchangeable
COUNTERBORE

Change Cutting Tools While Machine is in Operation

!

The lock driving plunger of the WILDER which permits the easy change of cutting tools and which holds the cutting tool in the chuck or holder is Chrome Vanadium heat treated steel. Drive is based on 230,000 lbs. tensile strength to the square inch. The WILDER Chuck is made of the same material, ground for accuracy and perfect alignment.

Write for Details and Prices

THE WILDER TOOL CO.
GREENFIELD, MASS.

No. 5 Jr. Punch

Capacity ¼" through 16 gauge
Weight 2½ lbs.

Scratch Awl & Drift Pin

Drop Forged—Alloy Steel-Hardened

No. 10 Ball Bearing Punch

Capacity. ⅜" through ¼" iron
Weight 8½ lbs.

No. 8 Imperial with base

Made in 3 sizes, Nos. 7, 7½, 8
Operating handles will not become disengaged. Roller Bearing.

CAPACITY
¼" hole thru ¼" iron
Weight, 16 lbs. Length over all, 25½".
Can be Furnished With or Without Base

Angle Iron Notcher No. 60

Roller Bearing
This Notcher and Bender has a Capacity 3"x3"x⅜" angle

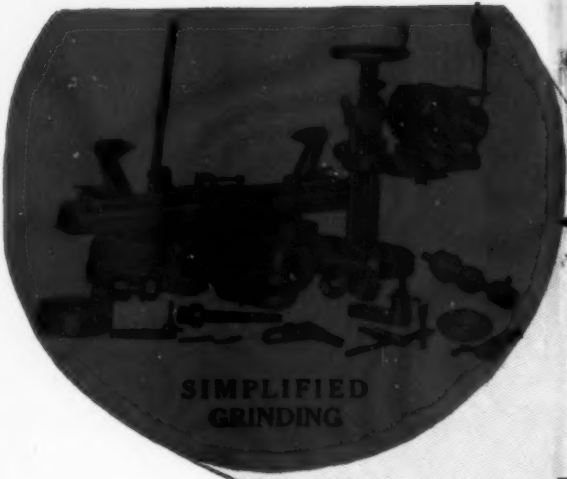
Angle Iron Bender No. 61

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL CO.

95 Forbes Street, Rockford, Illinois

WHAT PRICE DRILLS?
When you purchase twist drills, do you "go shopping" or place your order on the "Cost-per-Hole" Test?
What do we mean by "Cost-per-Hole" Test? Simply that, no matter what you pay for drills, their value depends entirely upon the number of holes each drill can produce, and the cost per hole drilled.
As a result, more and more drill users, and buyers, are asking, not "How much?" but "What do your drills cost per hole?"
Cle-Forge High Speed Drills are offered you on the basis of their known, everyday performance. If you are interested in this modern, scientific way of buying, ask us to send you Performance Digests Nos. 56, 58, 59, 60, 61, 72, 82 and 83, together with complete instruction forms for making a comprehensive drill test in your own shop.
C
TRADE MARK
The CLEVELAND TWIST DRILL COMPANY
CLEVELAND
NEW YORK-CHICAGO-LONDON
SAN FRANCISCO
TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES



A Complete Universal Grinder

Standard Equipment includes centers, sleeve sliding attachment and a universal attachment which has with its swivel base and head a universal link making it adjustable to any angle or position with a capacity up to 18" in diameter, indexing with either a finger indexer or dividing head which is furnished. The motor is adjustable to any horizontal position.

If your machinery dealer cannot supply you write us today for complete information

SPEED UP YOUR CUTTER GRINDING

The Surfacer Manufacturing

2456 Irving Park Blvd., Chicago, Ill., U.

This Universal Cutter Grinder

Is In The Spotlight

WHY ? BECAUSE it is a precision machine with the same range, accuracy, quality of material and workmanship heretofore found only in other grinders costing from three to five times as much, having incorporated the new note of modern engineering and tool designing which is simplified construction, light and quick acting machinery to **reduce costs**

which

in these days of keen competition executives, superintendents and foremen are striving to do.

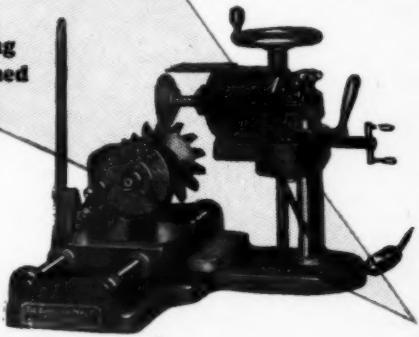
Why not investigate?

THE SURFACER'S No. 2 UNIVERSAL CUTTER GRINDER which materially reduces the preparatory time of set-up and due to its flexible adjustments is easily adaptable to your particular problems.

A GOOD NEW YEARS RESOLUTION

will be to do your cutter grinding faster, better and cheaper with a SURFACER No. 2 UNIVERSAL CUTTER GRINDER.

Grinding A Formed Milling Cutter



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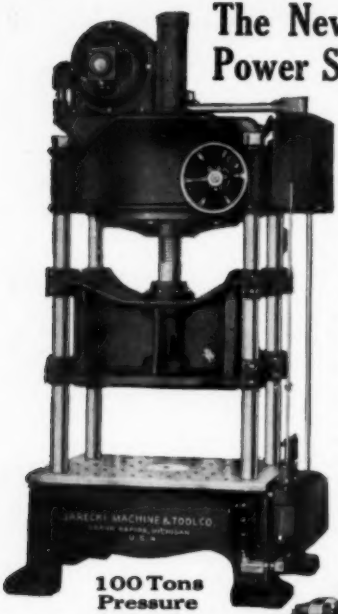
The New Type CC Power Screw Press



100 Tons Pressure

Also Hand Screw Presses 25 and 80 Ton Pressures

PERFECT ALIGNMENT

Enables one man to do speedier, accurate work--your diemaker requires no help in handling dies. Push button type switch, conveniently located, enables operator to start, stop or reverse ram without taking eyes off work being done. Rigid, powerful—delivers 100 tons pressure. Perfect alignment eliminates any tendency to gouge or nick dies—insuring perfect work. No wedging or prying. Operated by 10 h. p. motor.

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Surface Grinder

Silent efficiency is the action of this powerful and rigid surface grinder —equipped with graduated feeds and all the latest attachments.

Price and details on inquiry

JARECKI MACHINE AND TOOL CO.

Department A

GRAND RAPIDS, MICHIGAN

Taylor & Fenn Belt Driven

No. 12 Spring Press

UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 3¼ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.

Hartford, Conn., U. S. A.

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Machine Shops can get along without tools like expanding mandrels and high speed drills, but they get out work much faster with them.

Write Us about Mandrels

W. H. Nicholson & Co.

117 Oregon St., Wilkes-Barre, Pa.

When a Tap Breaks —That's Enough

Your loss will stop there if you have a handy WALTON TAP EXTRACTOR in your shop.

Simply insert the Fingers of this time saving device into the flutes of the broken tap, unscrew the Extractor with an ordinary tap wrench, and back the tap out. ***A WALTON*** obviates delays and operates so simply that an apprentice can handle it.

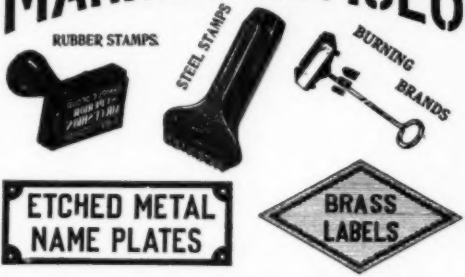
Made in three and four-flute styles.

Let us send you one for a sixty-day trial

The Walton Company

302 Pearl St., Hartford, Conn.

MARKING DEVICES



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BRIDGEPORT, CONN.

"ALNOR" Pyrometers

for the Hardening Furnace

MODEL 223

$35
COMPLETE

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low first cost and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.

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Arbor Presses
Atlas Press Co., Kalamazoo, Mich.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, K. R., Buffalo, N. Y.

Arbors, Solid
Nicholson & Co., W. H., Wilkesbarre, Pa.

Back Spot Facing Bars and Cutters
Wilder Tool Co., Greenfield, Mass.

Balancing Ways
Anderson Bros. Mfg. Co., Rockford, Ill
Sundstrand Machine Tool Co., Rockford, Ill.

Ball Bearings
Boston Gear Works Sales Co., Norfolk Downs, Mass.

Band Saw Machines, for Metal
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Jarvis, Inc., Benj. E., Newark, N. J.

Bending Machines, Hand and Power
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Lewthwaite Mchs. Co., T. H., 511E. 47th., N. Y.
Pedrick Tool & Machine Co., Philadelphia

Bins
Stackbin Corporation, Providence, R. I.

Blowers, Electric
Clements Mfg. Co., 6650 Narragansett Ave., Chicago, Ill.
Standard Electrical Tool Co., Cincinnati, O.

Belt and Nut Machinery
Foote-Burt Co., Cleveland, O.

Boring Bars
Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder
Pedrick Tool & Machine Co., Philadelphia

Boring, Drilling & Milling Machines
Defiance Machine Co., Defiance, O.

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia

Brakes, Hand Truck
Fisher Equipt., 1281 Caxton Bldg., Chicago

Brands, Burning
Schwerdtle Stamp Co., Bridgeport, Conn.

Broach Sharpening Machines
Colonial Broach Co., Inc., Detroit, Mich.

Broaches
Colonial Broach Co., Inc., Detroit, Mich.

Broaching Machine Work
Colonial Broach Co., Inc., Detroit, Mich.

Broaching Tools
Colonial Broach Co., Inc., Detroit, Mich.

Buffers, Bench Type
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Buffers, Combination Grinder
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Buffers, Floor Stand
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Buffers, Portable Electric
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Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.
Vim Electric Tool Co., 149 Broadway, N. Y.

Buffing Wheels
Hunt & Son, C. B., Salem, Ohio

Cap Screws, Hexagon Head
Elco Tool & Screw Corp., Rockford, Ill.

Center Grinders
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Centering Machines
Sundstrand Machine Tool Co., Rockford, Ill.

Centers, Frictionless Live
Precision Gauge & Tool Co., Detroit, Mich.

Centers, Special
Precision Gauge & Tool Co., Detroit, Mich.

Chain Drives
Boston Gear Works Sales Co., Norfolk Downs, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chains, Silent and Roller
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Chucks, Automatic
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Collet
Ames Co., B. C., Waltham, Mass.
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Drill
Elco Tool Co., Inc., 894 Johnson Ave., Brooklyn, N. Y.
Hazen, H. J., 109 Lafayette St., New York

Chucks, Drill and Tap
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Classified Finding Index

Chucks, Lathe
Hagen, H. J., 109 Lafayette St., New York

Chucks, Magnetic
J. & H. Electric Co., Providence, R. I.

Chucks, Quick Change
Glenzer Co., J. G., Detroit, Mich.
Procunier Safety Chuck Co., 14 So. Clinton St., Chicago
Wilder Tool Co., Greenfield, Mass.

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Edgemont Machine Co., Dayton, Ohio

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Wade Tool Co., Waltham, Mass.

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Couplings, Friction Clutch
Conway Clutch Co., Cincinnati, O.

Couplings, Shaft
Nicholson & Co., W. H., Wilkesbarre, Pa.

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Cincinnati Electrical Tool Co., Cincinnati, O.

Cylinder Boring Machines, Portable
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Luna Electric Equipment Co., Toledo, Ohio

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Rice Tool & Screw Corp., Rockford, Ill.
Wade Tool Co., Waltham, Mass.

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Peerless Machine Co., Racine, Wis.

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Avey Drilling Machine Co., Cincinnati
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
U. S. Electrical Tool Co., Cincinnati, O.

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Foote-Burt Co., Cleveland, O.
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Mal. Tool Co., 7750 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
U. S. Electrical Tool Co., Cincinnati, Ohio
Vim Electric Tool Co., 149 Broadway, N. Y.

Drilling Machines, Post
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Drilling Machines, Radial
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

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Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

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Cincinnati Electrical Tool Co., Cincinnati, O.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
U. S. Electrical Tool Co., Cincinnati, Ohio

Drills, Right Angle

U. S. Electrical Tool Co., Cincinnati, Ohio

Drills, Twist

Cleveland Twist Drill Co., Cleveland, Ohio.

Drive Screws

Elco Tool & Screw Corp., Rockford, Ill.

Drives, Drill Press

Hertzler & Zook Co., Belleville, Pa.

Drives, Grinder

Hertzler & Zook Co., Belleville, Pa.

Drives, Lathe

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Hertzler & Zook Co., Belleville, Pa.

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Standard Electrical Tool Co., Cincinnati, O.

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Western Tool & Mfg. Co., Springfield, O.

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U. S. Electrical Tool Co., Cincinnati, Ohio

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Luma Electric Equipment Co., Toledo, Ohio

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Nall Tool Co., 7730 S. Chicago Ave., Chicago
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Gages, Pin, Plug, Ring and Snap

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Gages, Spline

Colonial Broach Co., Inc., Detroit, Mich.

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Gears

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Chicago Gear Works, 769-773 W. Jackson Blvd., Chicago
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Massachusetts Gear & T. Co., Woburn, Mass.

Gears, Herringbone

Crofoot Gear Corp., C.E., So. Easton, Mass.

Gears, Rawhide, Bakelite, Fabroil

Chicago Gear Works, 769-773 W. Jackson Blvd., Chicago
Crofoot Gear Corp., C.E., So. Easton, Mass.

Grinding Machines, Angle Plate

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Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Belt

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Bench

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Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.

Grinding Mchs., Combination Buffer

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Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

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LeBlond Mch. Tool Co., R.K., Cincinnati, O.
National Machine Tool Co., Racine, Wis.
Standard Electrical Tool Co., Cincinnati, O.
Surfacer Mfg. Co., 2456 Irving Park Blvd., Chicago, Ill.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical

Jarecki Mchs. & T. Co., Grand Rapids, Mich
Thompson Grinder Co., Springfield, Ohio

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Grinding Machines, Die

Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Standard Electrical Tool Co., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Disc

Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Drill

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.

Grinding Machines, External

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Face

Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Floor

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.

Grinding Machines, Flexible Shaft

Keller Mch. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Internal

Mall Tool Co., 8389 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
U. S. Electrical Tool Co., Cincinnati, O.

Grinding Machines, Center Electric

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Lathe Electric

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Portable Electric

Cincinnati Electrical Tool Co., Cincinnati, O.
Keller Mech. Eng. Co., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7720 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Standard Electrical Tool Co., Cincinnati, O.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
U. S. Electrical Tool Co., Cincinnati, O.
Vim Electric Tool Co., 149 Broadway, N. Y.

Grinding Machines, Snagging

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Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.

Grinding Machines, Surface

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Standard Electrical Tool Co., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Tap

Standard Electrical Tool Co., Cincinnati, O.

Grinding Machines, Tool

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Standard Electrical Tool Co., Cincinnati, O.
Surfacer Mfg. Co., 2456 Irving Park Blvd., Chicago, Ill.
Taylor & Fenn Co., Hartford, Conn.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Tool Post

Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Universal

Surfacer Mfg. Co., 2456 Irving Park Blvd., Chicago, Ill.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Vertical Spindle

Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Hack Saw Blades

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Peerless Machine Co., Racine, Wis.

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis.

Hoists, Portable

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Hagen, H. J., 109 Lafayette St., New York

Hollow Mills

Wilder Tool Co., Greenfield, Mass.

Hose Couplings

Hunt & Son, C. B., Salem, Ohio

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Individual Motor Drives
Hertzler & Zook Co., Belleville, Pa.

Jigs and Fixtures
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Elco Tool & Screw Corp., Rockford, Ill.

Lag Screws
Elco Tool & Screw Corp., Rockford,

Lathe Drives
Cullman Wheel Co., 1859 Algeld St., Chgo.
Hertzler & Zook Co., Belleville, Pa.

Lathe Grinders
Standard Electrical Tool Co., Cincinnati, O.

Lathes, Automatic
Townsend Mfg. Co., H. P., Hartford, Conn.

Lathes, Bench
Ames Co., B. C., Waltham, Mass.

Lathes, Engine
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathes, Extension Bed Gap
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Gap
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Manufacturing
LeBlond Mch. Tool Co., R K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Polishing and Buffing
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.

Lathes, Precision
LeBlond Mch. Tool Co., R K., Cincinnati, O.
Wade Tool Co., Waltham, Mass.

Lathes, Tool Room
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Mandrels, Expanding
Nicholson & Co., W. H., Wilkesbarre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Solid
Nicholson & Co., W. H., Wilkesbarre, Pa.

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Elco Tool & Screw Corp., Rockford, Ill.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Bench
Ames Co., B. C., Waltham, Mass.
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
Superior Machine & Eng. Co., Detroit, Mich.

Milling Machines, Manufacturing
Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable
Fedrick Tool & Machine Co., Philadelphia

Milling Machines, Spline
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Name Plates, Etched and Stamped
Schwerdtle Stamp Co., Bridgeport, Conn.

Nibbling Machine
National Machine Tool Co., Racine, Wis.

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Nut Setters, Electric
Cincinnati Electrical Tool Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.
Vim Electric Tool Co., 149 Broadway, N. Y.

Nuts, Machine Screw
Elco Tool & Screw Corp., Rockford, Ill.

Pins, Leader And Dowel
Baumbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Plugs, Square Head and Slotted
Elco Tool & Screw Corp., Rockford, Ill.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Polishing and Buffing Machines
Cincinnati Electrical Tool Co., Cincinnati, O.
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Mail Tool Co., 7750 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, O.

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Nicholson & Co., W. H., Wilkesbarre, Pa.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, R. K., Buffalo, N. Y.

Presses, Foot
Taylor & Fenn Co., Hartford, Conn.

Presses, Punch
Lewthwaite Mchs.Co.,T.H.,311E.47th.,N.Y.

Presses, Screw
Jarecki Mchs. & T. Co., Grand Rapids, Mich.

Pulley Machinery
Avey Drilling Machine Co., Cincinnati

Profiling Machines
Wade Tool Co., Waltham, Mass.

Pulleys, Iron, Solid and Split
Conway Clutch Co., Cincinnati, O.

Pumps, Lubricant
Buthman Machinery Co., Cincinnati, O.

Punch Press Feeds
Wittek Mfg. Co., 4309 W. 24th Place, Chgo.

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Lewthwaite Mchs. Co., T. H., 311 E. 47th, New York
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies
Lewthwaite Mchs.Co.,T.H.,311E.47th.,N.Y.

Punches and Shears
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Hagan, H. J. 109 Lafayette St., New York

Pyrometers
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Reamer Holders
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Cleveland Twist Drill Co., Cleveland, Ohio.
Schellenbach Hunt Tool Co., Cincinnati, O.

Reamers, Portable Electric
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

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Riveters, Pneumatic
Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Riveting Machines
Grant Mfg. & Mchs. Co., Bridgeport, Conn.
Townsend Mfg. Co., H. P., Hartford, Conn.

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Lewthwaite Mchs.Co.,T.H.,311 E.47th,N.Y.

Roll Forming Machines
McKinney Tool & Mfg. Co., Cleveland, Ohio

Classified Finding Index

Saw Sharpening Machines
Porter Mchy. Co., J. E., Muskegon, Mich.
Wardwell Mfg. Co., Cleveland, O.

Saws, Electric Hand
U. S. Electrical Tool Co., Cincinnati, O.

Scraping Machines, Hand & Pneumatic
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Screw Drivers, Electric
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Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio
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Screw Machines, Automatic
Townsend Mfg. Co., H. P., Hartford, Conn.

Screws, Cap, Drive, Lag, Mch. & Wood
Elco Tool & Screw Corp., Rockford, Ill.

Set-Up Appliances
Standard Shop Equip. Co., Philadelphia, Pa.

Shafts, Flexible
Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7780 S. Chicago Ave., Chgo.
Strand Co., N. A., 5001 N. Lincoln St., Chgo.
U. S. Electrical Tool Co., Cincinnati, Ohio

Shaping Machines
Osborne & Sexton Machy. Co., Columbus, O.
Smith & Mills Co., Cincinnati

Shears, Alligator
Canton Foundry & Machine Co., Canton, O.

Shears, Hand
Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Lewthwaite Machine Co., T.H., 811 E. 47th St., New York
Whitney Metal Tool Co., Rockford, Ill.

Shears, Slitting
National Machine Tool Co., Racine, Wis.

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
American Tool Works, Inc., Hartford, Conn.
Superior Machine & Eng. Co., Detroit, Mich.
Wade Tool Co., Waltham, Mass.

Speed Reducers, Worm, Spur and Herringbone
Boston Gear Works Sales Co., Norfolk Downs, Mass.
Chicago Gear Works, 769-773 W. Jackson Blvd., Chicago
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Spot Welding Machines, Speed.
Elsler Electric Corporation, Newark, N. J.

Sprockets
Chicago Gear Works, 769-773 W. Jackson Blvd., Chicago
Cullman Wheel Co., 1359 Altgeld St., Chgo.
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Straightening Machines
Whitney Metal Tool Co., Rockford, Ill.

Stud Setters
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Tapping Machines and Attachments
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Cincinnati Electrical Tool Co., Cincinnati, O.
Ettco Tool Co., Inc., 594 Johnson Ave., Brooklyn, N. Y.
Leland Gifford Co., Worcester, Mass.
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago
Whitney Metal Tool Co., Rockford, Ill.

Threading Machines, Automatic, Stud
Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Threading Tools
Armstrong Bros. Tool Co., 309 N. Francisco Av., Chicago

Tool Holders
Armstrong Bros. Tool Co., 309 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.
Wilder Tool Co., Greenfield, Mass.

Classified Finding Index

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tube Flanging Machines
Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery
Automatic Machine & Engineering Co., Inc., Detroit, Mich.
Bennett Machinery Co., 30 Church St., New York, N. Y.
Bernstein & Co., Geo. M., 221 N. Elizabeth St., Chicago, Ill.
Blaser Mfg. & Mchy. Co., J., Springfield, Ill.
Brandt, W. S., Pittsburgh, Pa.
Broadway Machinery Co., 211 Centre St., New York, N. Y.
Brotherhood & Son, Percy M., 25 Church St., New York, N. Y.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Mchy. & Supply Co., Cincinnati, O.
Clinton Machinery Co., 136 S. Clinton St., Chicago, Ill.
Davis Machinery Exchange, Toledo, O.
Delta Equipment Co., Philadelphia, Pa.
Donahue Steel Products Co., 74th and Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Elster Electric Corp., Newark, N. J.
Easley Machinery Co., E. L., 551 Washington Blvd., Chicago
Hess-Schenck Co., Cleveland, Ohio
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia, Pa.
Indianapolis Mchy. & Supply Co., Indianapolis, Ind.
Interstate Mchy. Co., 136 S. Clinton, Chgo.
Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, Ohio
Kinney Co., E. A., Cincinnati, O.
Klauber Mchy. Co., E. L., St. Louis.
Long Machinery Corporation, Boston, Mass.
McDonald Machinery Co., St. Louis
Marr-Galbreath Mchy. Co., Pittsburgh, Pa.
Midwest Equipment Co., 628 W. Lake St., Chicago, Ill.
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Machinery Co., Chas. 118 So. Clinton St., Chicago, Ill.
Morey and Co., Inc., 408 Broome St., N. Y.
Morris Machinery Co., Inc., Newark, N. J.
Norton-Broadway Mchy. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Randle Machinery Co., Cincinnati, O.
Reeve-Fritts Co., 558 W. Washington, Chgo.

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Rice, Joseph S., Wilkes-Barre, Pa.
Riverside Machinery Depot, Detroit, Mich.
Russell Machine Co., Pittsburgh, Pa.
Saltzman, S. L., 524-26 W. Van Buren St., Chicago, Ill.
Scott-Bassbach Mchy. Co., 4607 W. 26th St., Chicago
Seyfert's Sons, Inc., L. F. Philadelphia, Pa.
Segal Machinery Co., 309 West Lake Street, Chicago, Ill
Simmons Machine Tool Corp., Albany, N. Y.
Strafer Machinery Co., Jersey City, N. J.
Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., Newark, N. Y.
Surplus Material & Mchy. Co., Detroit, Mich.
Taylor-Hall Welding Corp., Worcester, Mass.
Toledo Machinery Exchange, Toledo, Ohio.
United Mchy. & Supply Co., St. Louis.
Wacha-Gregg & Co., 117 N. Jefferson St., Chicago
Wertman Mchy. Co., M. A., Cleveland, O.
West Penn Machinery Co., Pittsburgh, Pa.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Wigglesworth Mchy. Co., Cambridge, Mass.

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Graham Manufacturing Co., Providence, R. I.
Hagen, H. J. 109 Lafayette St., New York.
Martin Tool & Die Works, J. E., Springfield, O.
Plunket Mchs. Co., J. E., 215 N. Ada, Chgo.
Sheldon Machine Co., Railway Exchange Building, Chicago, Ill.

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Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine
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Vises, Shaper
Graham Manufacturing Co., Providence, R. I.
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Sheldon Machine Co., Railway Exchange Building, Chicago, Ill.

Welding Machines, Electric Spot
Elster Electric Corporation, Newark, N. J.

Welding Machines, Resistance
Elster Electric Corporation, Newark, N. J.

Wood Screws
Elco Tool & Screw Corp., Rockford, Ill

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Chicago Gear Works, 769-773 W. Jackson Blvd., Chicago
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Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production. The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

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Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus $3.00 for name and address. Minimum charge, $6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery, and the publisher will pass them along to the advertisers.

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Press, Consolidated No. 3.
Press, Zeh & Hahn, No. 6 inclin.
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Screw machine, W. & S. No. 4.
Shaper, Rhodes 7" with c/s.
Unishear, No. 0-54 14 gauge.

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Both warranted in good running order.

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Roller die machine, 12 sets rolls.
Shears, 10' 10 ga. Bertsch motor dr., 6' 3/16"; 8'16 ga.; 50" 10 ga.
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Brakes, Chicago leaf type, 10'—¼".
Brakes, Chicago leaf type, 10'—3/16"
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Brake, Chicago power press, 10", capacity No. 10, new.
Brake, press, Chicago 8', cap. No. 12.
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Lathe, 11"x5' Monarch.
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Bor. mill, No.32 G.& L. bor.,3" bar.
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Gear hobber, No.12 Barber Colman.
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Lathe, 79" dbl. head, driving wheel.
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Miller, No. 2 Cinti high power s. p.
Miller, No. 2-M Cin., s. p d. plain.
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Planer, 24x24x6' Ohio 1 head.
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Shear, 10'—14 gauge.

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Grinder, No. 11 Brown & Sharpe cyl.
Lathe, 16"x6' Hendey taper, draw, relieving attachment.
Lathe, 16"x8' Sebastian motor drive.
Lathe, 12"x6' Davis motor dr., d. c.
Lathe, 27"x12' Sidney q.c.g., d. b.g.
Lathe, 24"x12' Bradford q.c.g., d.b.g.
Pipe threader, 4" Williams mtr. dr.
Press, No. 3½A Bliss toggle draw.
Press, No. 62 Bliss str. side, 6" str.
Press, No. 4 Walsh inc., fly wheel.
Press, No. 3½ Styles Bliss type.
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Shear, 8' Toledo squaring 3/16" cap., 16" gap.

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Drill, W. E. gang 6' radial.
Drill, Foote-Burt 24" heavy duty.
Drill, Harrington, 61 B, multiple.
Drill, Woodward & Rogers 6-spdl.
Drill, Pratt & Whitney No. 12 mult.
Fox lathe, Warner & Swasey No. 3.
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Hammer, Mayer 100 lb. upright.
Lathe, Bradford 32"x18'.
Lathes, Rockford 15"x8'.
Lathe, Whitcomb-Blaisdell 18"x8'.
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Milling mche., Rockford No. 6 plain
Planer, Beimer, 48"x48"x12', 3 hds.
Press, Niagara No. 5½ o. b. i.
Screw machine, Foster No. 4.
Shaper, Cincinnati 20".
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Turret lathe, Warner & S. No. 2 A.

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Auto. lathes, 14" Fay, belt and m d.
Air comp., 4½"x4½" & 6"x6" Curtis.
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Blowers, Root No. ½, 500 c. p. m.
Bolt cutter, 1" Wells Bros., m. d.
Boring mill, 42" Bullard, 2-hds., s.p.d.
Boring mill, 30" King; and Bullard.
Boring mill, 2½" bar W. & S. horiz.
Bor. mill, horiz. 2½" Clev., g. b., s.p.d.
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Brake, 8'x12 ga. power, Chicago.
Brakes, hand, 10', for 18 ga.
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Chuck, Walker magnetic, 6" diam.
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Drills, multiple 10 and 20 spindle.
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Drill, radial, 3½' C-B., g. b. for m. d.
Drill, sensitive radial, 3' Amer. t. a.
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Exhauster, with 1½ h. p. motor, 1/60.
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Forging mche., 3" Acme steel bed.
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Gear hobber 12" S-S "TRO".
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Grinder, No. 1 LaSalle surface.
Grinder, 18-D. Rowbottom, o.h.b.b.
Grinders, No. 1 Norton, t. & c.
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Hack saw, 6"x6", 12"x12" Racine.
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Lathe, 14"x6' L. & S. q. c. g., t. a.
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Lathe, 16"x8' S. Bend, 2 cks. & c/s.
Lathe, 18"x8' L. & S. sel. hd. m. d. t. a.
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Miller, plain No. 3 B. & S.
Miller, plain No. 2 Rockford.
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Motors, ¼, 2, 5, 7½ h. p. 3/60/220 v.
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Press, o.b.i. No. 3 Niagara, 1½" str.
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Presses, No. 87 Niagara, screw.
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Shaper, 16", Cin., b. g., crank.
Shaper, 24" Milwaukee b. g., crank.
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Shear, foot, 30"x20 gauge.
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Shear, rotary, 36" throat cap. 7/32".
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, squaring, 8'x14 ga. power.
Shear, squaring, 60"x14 ga. Canton.
Shear, 10'x16 ga. Ohl power.
Slotter, 15" Dill, for motor drive.
Spin. lathe, No. 6 Bliss, c.r., tailstock,
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Turret lathe, 26"x7½" h. s., Libby.

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Lathe, American 18"x12' q. c.
Miller, No. 2 Cincinnati plain.
Miller, production, Cincinnati 18".
Punch, gang, 32" bet. housings.
Punch and shear, ½" in ⅝", double.
Rolls, (3), 7'x7", 6'x5", 6'x9".
Tapper, No. 2X Garvin.

FOR SALE BY

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Automatic, 13" Cone, 4-spindle.
Automatic, No. 00 B & S high speed.
Bending roll, 25' H & J. ⅜" cap.
Column facer, 14" Espen-Lucas.
Drill, 4' Cincinnati-Bickford, radial.
Hammer, 2000 lbs Chambersburg.
Hammer, 1100 lb. N.-B.-P. sgl. fr.
Lathe, 36"—60"x32' McCabe, belt.
Miller, No. 3B Brown & S. plain.
Planer, 30"x30"x6' Detrick & H.
Punch, 30" beam cap. 2—1"x1".
Punch and shear, 24" Southwark, arch. jaw, cap. ⅝"x⅝".
Shaper, 24" Gould & Eberhardt.
Shear, 8' Covington squaring, gap pattern, ⅜" capacity.

FOR SALE BY

M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Brake, 6' 18 gauge Pexto hand cornice brake.
Drill, Allen 4-spindle, power feed, 8" overhang, No. 2 M. T., late machine.
Drill, radial, 4' Dreses motor drive, heavy duty.
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Headers, cold, Manville No. 2 s. d. d. s., excellent condition.
Lathe, Rivett No. 505N precision bench, lot of collets, fine condition.
Lathe, Cincinnati 16"x8' q. c. g., very low price.
Oven, enamel, Gehnrich electric, conveyer type A 1 cond. 67' long.
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Automatic, No. 0 Brown & S. b. d.
Air compressors, 30 to 2500 cu. ft.
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Blowers, Nos. 3 & 4 North Amer.
Bolt cutter, 2½" Acme, sgl. hd. m. d.
Bolt cutter, 1½" Landis, dbl. head.
Bolt cutter, 1" Landis, 3hds., m. d.
Boring mill, 10'-16' Betts, 2 hds. m. d.
Bor. mill, hor., No. 1 Cleve. 2½" bar.
Boring mill, floor type, 5½" D. & H.
Brake, 5' press type, 10 gauge.
Brake, 6' hand, 16 gauge.
Brake, 8' D. & K. 10 ga. box & pan.
Brake, 10' Dreis & K. 3/16", m. d.
Bulldozers, Nos. 2, 4, 6, 28, 29 & 30.
Die threader, Smalley General, dies.
Dieing mches., 25 & 50 ton H. & W.
Drill, 21" Rockford, tap. att. m. d.
Drill, No. 3 Defiance, No. 5 M 'T' m.d
Drill, radial, 2½' Fosdick, t. a., b. d.
Drill, radial, 4' Prentice, t. a., b. d.
Drill, radial, 5' Dreses, motor on arm
Drill, radial, 6' Dreses, s. p. d.
Flanger, McCabe, ½" capacity, dies.
Gear cutters, 11", 24" & 36" Gleason.
Gear cutter, spur, 36"x10" Newark.
Gear cutter, 72" Gould & Eberhardt.
Gear hobber, No. 3 Sch. & Sch. 118".
Gear planer, 29-ft. Gleason, m. d.
Gear tester, 18" Gleason, bevel.
Grinder, d. e. U- S. 5 h p. a. c.
Grinder, rad., 14" M. & D., m. d.
Grinder, internal, No. 70 Heald.
Grinder, surface, No. 16 Blanchard.
Grinder, surface, 14" Arter.
Grinder, tool & cut., No. 2 Walker.
Hammer, Blacker, power, 35-lbs.
Hammer, 80-lb. Bradley, cush. helve.
Hammer, 200-lb. Bradley, cush. helve.
Hammer. 200-lb. Bradley, compact.
Hammers, Nos. 3-B, 4-B, 4-N Nazel.
Hammers, steam, 600 lb. to 6000 lbs.
Jacks, 35-ton Barrett, ball bearing.
Keyseater, No. 1 Mitts & Merrill,
Lathe, 14"x8' American, g. hd. m. d.
Lathe, 16"x6' Hendey q. c. g.
Lathe, 20"x8' Hendey, tie bar, t. a.
Lathe, 24"x16' Bridgeford, g. hd. m.d.
Lathe, 48"x26' Bridgeford, g. hd. m.d.
Lathe, 32"x32' American, g. hd. m.c.
Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 6¾" hole.
Lathe, turret, 24" Libby, 7½" hole.
Lathe, tur., 26" Gisholt, 9" hole. m.d.
Lysholm tables, 72"x30'.
Miller, plain, No. 2-A Milwaukee.
Miller, univ. No. 2-B Milwaukee, s.
Miller, universal, No. 3 LeBlond
Miller, un.v. No. 4 Cincinnati.
Miller, univ. No. 5 Brown & Sharpe.
Miller, Ingersoll, 48x48"x20' adj. rail.
Nut tapper, 6-spindle Acme, 2".
Nut tapper, 10-spindle Acme, 1½".
Pipe mchs., 8" Oster, 8" Williams.
Pipe machine, 2' Landis.
Planer, 30"x30"x10' Woodward & P.
Planer, 48"x48"x12' D. & H. m. d.
Planer, o. s., 36"x36"x16' D. & H.
Planer, rotary, 48" Niles, m. d.
Presses, arbor, Nos. 7, 17 Greenerd.
Press, o.b.i. Ferracute C1, 3" stroke.
Press, o. b.i. No. 21 Bliss, b. d.
Press, o.b.i. CH-6 Ferracute, 12000 lbs.
Press, hydraulic, 1,000 ton United.
Press, hyd. 100-ton Watson-Stillman.
Press, s s., 13"x19½", 2" stroke.
Press, No. 75 Toledo, 14" stroke.
Press, No. 78½ Toledo, t. r. 10" str.
Press, No. 92 B Toledo, d.c. 24" str.
Press, screw, No. 87 Niagara.
Press, wheel, 200-ton Caldwell.
Punch, hor., Cleveland, 1" thru 1".
Punch, hand, Shatz, bar and angle.
Punch & sh. No. 6 L. & A. ¾" thru ¾".
Punch, multiple, No. 5 H. & J. 10'.
Riveters, air, hammer, spinning.
Rolls, bending, 12'x¼" H. & J. d. e.
Roller, thread, Nos. 40 & 50 W.-F.
Sand blast, Pangborn, 90". ER-1.
Saw, band, metal No. 2 Klem, m.d.
Saw, cold, 48" Newton, m. d.
Saw, frict. Model 1-A Hunter, 24".
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, No. 5 Marvel, b. d.
Saw, univ., Peerless, 6"x6", m. d.
Saw, univ. Peerless, 9"x9", m. d.
Screw mch , No. 2 B. & S wire feed
Shapers, 16", 20", 24" & 36" G. & E.
Shaper, 24" P. & J. univ. b. d.
Shaper, 48" Morton, draw cut.
Shear, angle, 6"x6"x⅜" Cleveland.
Shear, alligator, 1½", 2", 3" & 4".
Shear, bevel, Lennox ½".
Shear, gang slitter, No. 235-A Bliss.
Shear, guil. No. 3 H. & J. 2½" sq.
Shear, Cleveland "W" 3" capacity.
Shear, rotary, ½" Ryerson.
Shear, sq., 30"x18 ga. Bliss power.
Shear, square, 36"x16 ga. Pexto.
Shear, sq. 8'x16 ga. Obl.
Shear, 54"x¼" Garrison, 24" gap, m.d.
Shear, 12'x14 ga. Kutscheid.
Shear, 12'x⅜" Wheeling, 31" gap, m.d.
Slotter, 18" Dill, m d.
Straightener, 60" Nat. 14 ga. 17 rolls.
Straight'r, 48" United, 16 ga. 13 rolls.
Straightner, 1½" round Abramson.
Straightener, 4" round Abramson.
Straightner, No. 3 Medart. m. d.
Straight'r, No. 2-AK. & R. 20 roll, m.d.
Swaging mche., No. 5-A Standard.
Testing machines, 4000 & 100,000-lb.
Tumbling barrel, 18"x36", b. d.
Upsetters, 1" to 6".
Welders, spot and butt.

USED AND REBUILT MACHINERY

FOR SALE BY

Midwest Equipment Co., 628 W. Lake St., Chicago, Ill.

Drill, Avey No. 2. 4-sp., b. b., 15" overhang.
Drill, Avey No. 1, 1-sp., b. b., bench.
Drill, Allen 2-spindle. b. b.
Gear hobber, Barber-Coleman No. 3.
Gear hobber, Adams-Farwell No. 2.
Grinder, 6x32 Norton cylindrical.
Grinder, Badger No. 6 disc, b. b.
Planer, Niles, 24x24x6'.
Radial drill, American, 27"
Shear, Excelsior No. 52 gap. sq., 50".
Welder, 300 amp. Wilson arc, m. d.
Welders, 5-10 k. w. spot, new.

Milling machines, shapers, woodworking machines, motors and air compressors. Send us your inquiries.

FOR SALE BY

The E. L. Essley Machinery Co.

Telephone Randolph 9191 551 W. Washington Blvd., Chicago

Bolt cutter, ½ to 2½" Landis, Acme.
Boring mill, 52" King with bor. head
Drill, Avey, Allen, Leland-Gifford.
Grinder, No. 1 LeBlond universal.
Hammer, No. 5A High Speed rivet.
Hobber, Nos. 3 & 12 Barber-Colman
Lathe, 12"x4' Hendey, arr. for m. d.
Lathe, 20"x18' Sidney.
Lathe, 25"x12' Sidney.
Lathe, 33"x16' LeBlond, geared hd.
Miller, Nos. 2 & 3 Cincinnati plain.
Miller, No. 2 Ohio heavy universal.
Miller, No. 3 Cincinnati, universal.
Pipe mche., 6" Landis, 6" E. C. & B.
Planer, 16' Niles plate.
Planer, 22"x22"x4' Whitcomb.
Planer, 36"x36"x14' Chandler.
Press brake, 10'-6' Obl. 10 ga. cap.
Presses, No. 165-B Consolidated gd.
Presses, Nos. 19 and 21½ Bliss.
Presses, No. 5 Toledo, o. b. i.
Radial, 2½' & 6' Am. 3' & 5' Cin-Bick
Saws, 6"x6" Peerless; No. 12B Higley
Screw mchs., Nos. 5 & 6 Wood tilted
Screw mchs., No. 4 Warner & S.
Shapers, 20" Smith & Mills.
Shapers, 32" Columbia.
Shear, 42" Stoll, 16 ga.
Shears, 52" Niagara 14 ga.
Turret lathe, No. 1-B Foster chuck.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St., St. Louis, Mo.

Bar shear, 5"x8".
Bolt threader, 1½" Merriman.
Bolt threader, 2" Landis.
Boring mill, 36" Gisholt.
Drill, 3' American, triple purpose.
Drill, 14" Mason high speed.
Drill, 20" Champion.
Drill, 22" Barnes, back geared.
Drill, 24" Prentice, sliding head.
Drill, 28" Barnes back geared.
Drill, 28" Barnes sliding head.
Drill, 1-spindle Avey.
Drill, 2-spindle Leland-Gifford.
Drill, 3-spindle Avey.
Grinder, Wells Bros. universal.
Grinder, 12"x60" Landis universal.
Hammer, 60 lb Bradley helve.
Hammer, 600 lb. steam.
Lathe, 14"x10' Lodge & Shipley, qcg
Lathe, 18"x8' Hendey, motor driven.
Lathe, 20"x10' Bradford.
Lathe, 24"x10' LeBlond.
Lathe, 24"x12' Schumacher-B., qcg.
Lathe, 30"x15' Lodge & Shipley, qcg.
Lathe, 24"x14' Whitcomb-Blaisdell, motor driven.
Lathe, 36"x15' American.
Miller, No. 1 U. S. hand.
Miller, No. 2 LeBlond universal.
Miller, No. 2 Ohio single pulley dr.
Miller, No. 3 Rockford hand.
Miller, No. 3 Brown & Sharpe univ.
Miller, No. 5-B Brown & Sharpe
Press, No. 57 Swaine straight back.
Press No. 1½ Bliss toggle.
Press, No. 3 Toledo.
Press, Stiles & Parker drawing.
Press, No. 37 Niagara str. back.
Press, No. 24 Toledo cam drawing.
Press, No. 723 Toledo cam drawing.
Punch, No 14 W. W., 12" throat.
Punch, double end, two 20" throats, capacity 1" in 1".
Planer, 42"x42"x26' Wheeler, 2 hds.
Screw machine, No. 2 Warner & S.
Screw machine, No. 3A Warner & S.
Shaper, 16" Smith & Mills.
Shaper, 24" American-Klopp.
Shaper, 32" Cincinnati.
Shear, 48" Excelsior, No. 16 gauge.
Shear, 36" Bertsch, No. 16 ga. foot p.
Tapper auto., Rickert & Schafer.

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 99 Hope Ave., Worcester, Mass.

SPOT WELDERS

Thompson 5 k. w.
Thompson 35 k. w.
Taylor-Winfield 2 k. w.

BUTT WELDERS

Toledo 8B, capacity ⅞".
National 11-A, capacity 2".
Toledo No. 6, capacity 1".
National 15-A, capacity 2½".
Thomson 2-C, capacity ½".
Thomson 2-A automatic, capacity ½"
Federal 4-A butt welder, cap. ¼".
Thompson 7-A automatic.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Automatic screw machines, No. 00 B. & S., ser. nos. 2232 & 5152	$325—$400.
Auto. screw mchs. No. 0 B. & S. nos., 3340, 3495, 3831, slotting att. each	450.
Automatic screw mche., No. 0 B. & S. turret former, serial no 3123	200.
Automatic screw machine, 1⅛" Gridley 4 spindle model F	500.
Automatic screw machine, 2¾-3" Cleveland model A, square pan	500.
Automatic screw machine, 2¾-3¼" Cleveland model A, square pan	500.
Gear hobber, S. & S. No. 0, capacity 12"x10"x6¾ d. p	300.
Gear cutter, B. & S. No. 3 26" for spur gears	300.
Grinder, No. 190 Greenfield universal cutter and tool, complete	150.
Grinder, No. 1 Norton universal cutter and tool, power feed	250.
Grinder, No. 2 Brown & Sharpe automatic surface, magnetic chucks	450.
Grinder, Capitol internal, capacity 3/16" to 2"x2"	150.
Grinder, No. 7 Gardner 30", b. b. with press, belted motor drive	325.
Lathe, 16"x6' LeBlond quick change	400.
Lathe, 18"x6' Hendey quick change, taper attachment serial no 19189	600.
Lathe, 18"x7' South Bend, q. c., a. c., motor drive and chucks	600.
Lathe, 18"x9' Chard semi-quick change gear	425.
Lathe, 18"x8' Davis heavy duty, q. c. g., d. b. g., 14" 4-jaw chuck	550.
Lathe, 30"x13' H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs	1,250.
Miller, No. 3 Cincinnati, cone drive, old style	350.
Miller, No. 3 Kempsmith, cone drive, with c/s and vise	600.
Miller, No. 1 Garvin universal, fully equipped	450.
Miller, Cleveland universal, No. 1 g. h., fully equipped	750.
Miller, No. 2 MU. Garvin universal, fully equipped	550.
Miller, Briggs, G. & E. manufacturing, 16"	150.
Miller, No. 5 Becker vertical, no rotary	525.
Miller, No. 7 Becker, Lincoln type	125.
Miller, No. 21 Garvin power feed, oil pump	150.
Miller, Hendey, Lincoln type	100.
Miller, No. 12 Brown & Sharpe production type	150.
Miller, Ingersoll slab, 42"x36"x9'	1,000.
Planer, 24x24x8 Fitchburg, 1 head	200.
Planer, 36"x36"x12' Cincinnati with 2 heads	1,200.
Press, No. 30A, Perkins o. b. i. 2" stroke. 1500 lbs	150.
Press, No. 4, Niagara o. b. i. 2" stroke, 1700 lbs	200.
Press, No. 4 Rockford o. b. i. punch, 2½" stroke, 3500 lbs	375.
Press brake, 10' Ohl power, No. 10 gauge	1,500.
Screw machine, No. 1, B. & O. plain head, 13/16" capacity	225.
Separator, Curtis oil, 1 bushel	275.
Separator, oil, American 1½ bushel	300.
Shaper, 20" Cincinnati, crank, back geared, vise and c/s	550.
Shaper, 20" Columbia back geared crank	750.
Shear, 42" Niagara foot power, No. 16 gauge capacity	100.
Turret lathe, 2½x10" Milholland, for chuck and bar work	650.
Turret lathe, 3½"x36" Acme with chucking equipment	500.
Turret lathe, 24" Steinle, 4" hole, side carriage	300.

FOR SALE BY

Bennett Machinery Co. - 30 Church St., New York City

Automatics, Nos. 53 & 55 Nat. Acme.
Automatic, No. 24 New Britain.
Bolt cutter, 2½" Acme, 2 heads.
Bor. mills, 30" Rogers, 48" Colburn.
Brake, 8'x3/16" Robinson m. d.
Gear cutter, 60" Brown & Sharpe.
Gear hobbers, 19H & 24H G. & E.
Grinder, No. 2 Landis, universal.
Hammer, 300 lbs. Beaudry.
Keyseater, No. 2 Catlin; No. 0 M&M
Lathe, 84"x40' Putnam geared hd.
Lathe, 45"x45' Pond, geared head.
Lathe, 42"x24' Niles, cone.
Lathe, 27/36"x16' Reed-Prentice.
Lathe, 26"x12' Greaves-Klusman.
Lathe, 20"x10' Reed-Prentice.
Lathe, 18/20"x8' L. & S. select. hd.
Lathe, 16/18"x8' L. & S. cone head.
Lathe, 18"x6' Rahn-Larmon, t. a.
Lathe, 16"x6' & 14"x6' Hendeys.
Miller, No. 33 Kempsmith prod.
Miller, No. 4 Hendey, grd. head.
Miller, No. 3B Milwaukee, vert. att.
Miller, No. 3 Cincinnati, cone.
Miller, No. 14 Garvin, vertical.
Miller, No. 2 Knight vertical.
Pipe mchs., 8" Saunders, 8" Jarecki.
Planer, 24"x24"x6' Woodward m. d.
Radial drill, 3½' and 3' Muellers.
Shapers, 25", 20" and 16" S. & M.
Turret lathes, No. 4 Warner & S. universal both bar and chucking, equal to new.
Turret lathes, Nos. 1B, 2B Fosters.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

BORING MILLS.

36" Bullard New Era, vert. turret, (3).
No. 2 Binsse horizontal 2½".

DRILLS.

3½' American plain radial, s. p. d.
3' Cincinnati-Bickford radials, s. p. d
5' Prentice Bros. radials.
Henry & Wright sensitive radial.
28" Snyder sliding head drill.
3-spindle Cincinnati 26" sliding hd.

GEAR CUTTERS AND GRINDERS.

No. 13 Brown & Sharpe gear cutter, spur & bevel, 18x4.
No. 3 Brown & S., spur 26"x8".
No. 2 Brown & Sharpe surface.
Type "C" Diamond surface 24"x8".
Garvin hand feed surface.
20" Blount wet tool.
No. 13 B.&S. universal & tool.

LATHES.

14"x6' Hendey.
18"x8' Monarch q. c. g.
18"x10' Whitcomb-Blaisdell.
20"x12' Monarch.
24"x14' Whitcomb-Blaisdell.
24"x27' Fitchburg.
30"x20' Fitchburg.
16"x10' Pattern Makers lathe, p. f.

MILLING MACHINES.

No. 3 Cincinnati vertical, m. d.
Model "AB" Becker vertical s. p. d.
No. 1 Brown & Sharpe vertical.
No. 13-B B. & S. manufacturing
No. 24 Brown & S. plain, 60" feed.
No. 0 Brown & Sharpe plain.
No. 1½ B. &S. universal.
Newton adjustable rail type 20"x24" x8' table.
Ingersoll fixed rail type 24"x8'.
No. 2-M Potter & Johnston automatic horizontal.

SCREW MACHINES & TURRET LATHES.

No. 4 W. & S. grd. friction hd., 1½"
3"x36" Jones & Lamson flat turret.
No. 00, No. 0-G, No. 2 Brown & Sharpe automatics.

SHAPERS AND PLANERS.

20" Cincinnati motor driven.
16" Sellew tool room.
16" Garvin plain.
20"x20'x4' Fitchburg planer.
24"x24"x6' Whitcomb planer.
30"x30"x8' Cleveland open side.

MISCELLANEOUS.

Hammer, jewelers, 900 lbs. M. & P.
Hammer, forg., 80 lbs. Bradley c. h.
Hammering mch., No. 2 Langelier.
Rolling mill, 5"x8".
Rolling mill, 10"x12".
Rolling mill, 16"x22".
Rolling mill, 3-high.
Screw press, No. 3 Standard hand.
Slotter, Bement, Miles 12" vertical.
Tapping machine No. 1 Garvin vert.
Upsetting or forging, 2" Acme.

WOOD WORKING.

Band saw, 36" Crescent.
Boring mche., White vert. & hor.
Planer, S. A. Woods singlecylinder d. b. surface.
Shaper, Crescent single spindle.

FOR SALE BY

Randle Machinery Co., 1733 Powers St., Cincinnati, Ohio

Air compressors, all sizes and types.
Arbor press, Nos. 2 and 4 Greenerd.
Beading machine, Quickwork univ.
Beading mche., No. 624, Pexto, m.d.
Bending rolls, various sizes & types.
Bending rolls, Pexto Nos. 418 & 381.
Bolt cutter, Landis, 1½" cone drive.
Boring mills, 24" to 10'.
Brake, No. 814 Chicago hand power.
Brake, No. 618 Chicago hand power.
Brake, 8' & 10'x10 ga. Ohl.
Brake, 10'x3/16" D. & K., motor drive press type.
Drills, all sizes and types.
Grinder, No. 14—20" Gardner.
Keyseaters, Davis & Catlin.
Lathe, 12'x4' Sebastian, m. d.
Lathe, 16"x8' Sebastian, m. d.
Lathe, 15"x6' Monarch l. c.
Milling machine, No. 2 LeBlond universal, motor drive.
Pipe bender, Pedrick & Smith, m. d.
Pipe mche., 6" Landis, belt drive.
Press, No. 5 Bliss d. c.
Press, No. 91B Toledo d. c.
Press, No. 3 Amer. openback, m. d.
Press, Excelsior arch, 84".
Saw, 6" Economy, motor drive.
Saw, 6x6 Racine.
Shapers, 21" Milwaukee b. g.
Shear, Nos. 848 & 662 Niagara.
Shear, 10'x12 ga. Bertsch.
Shear, 10'x14 ga. Stoll, m. d.
Shear, 10'x3/16" Long & A., m.d.
Shear, No. 6 L. & A. universal.
Shear, Southwark rotary, 8 ga.
Shear, No. 38 Marshalltown m. d.
Welders, 100 to 300 amps., arc.
Wheel press, 100 to 300 tons.

Also many other bargains. Send us your inquiries.

FOR SALE BY

McDonald Machinery Co., 1535 N. Broadway, St. Louis, Mo.

Air compressors, Curtis 10x10 m. d.
Bolt mchs., Landis & Acme 1½".
Boring mill, Lucas No. 21 horizontal
Boring mills, 4 Bullard 42" low price.
Brake, D. & K. 6' 10 gauge, power.
Cut-off mchs., 4 Davis 6" capacity.
Drill, Moline 4-spindle and 32-spdle.
Drill, Foote-Burt 4-sp. No. 2 gang.
Drill presses, Allen and Sipp 4-spdl.
Drills, Leland-G 1-sp. h.s., b.b. floor.
Drills, Sipp 1-spindle, h. s., b. b., H. & W. 2-spdl.: H. & W. 6-spdl.
Drills, 20", 24", 26 & 28" b. g., & tap.
Gear hobber, G. & E. 24".
Grinders, B. & S. No. 2 universal; B. & S. No. 2 surface, complete.
Grinders, modern internal; Blount 30", wet (3), Heald 8" mag. ck.; Landis No. 1½ int., Landis 16"x42".
Grinder, Pratt & Whitney vert. surf.
Hack saws, 6x6 Racine Peerless h. s.
Keyseater, Mitts & Merrill No. 2.
Lathes, Hendey 14"x6' q. c. g. yoke head; Davis 22"x10' q. c. g.; Sidney 16"x6' q. c. g. LeBlond 16"x8' Whitcomb-B. 22"x8' q. c. g. Monarch 16"x8'; C. & J. 15"x8'; Superior 18"x8'; L. & S. & Cinti. 16"x6', q. c. g.; American 22"x10' q.c.g. geared hd.; American 16"x6' q. c. g.; Lehmann 18"x7' q. c. g.; 40 assorted sizes, quick and loose change gear, G-K 24"x16' l. c. g.
Milling machines, Van Norman No. 2 duplex; Ohio No. 20 plain, LeBlond No. 3-H; Brown & S. No. 3; B. & S. No. 3-B pl., s.p.d.; American No. 1½; Kempsmith No. 1 Cleveland No. 2; Becker No. 25 all plain; Kemp No. 3; Cin. & B. & S. No. 1½; Ohio No. 29 all universal; B. & S. No. 5 vertical; Cincinnati 18" mfg; Becker No. 2-H vertical.
Milling and drilling mchs., Knight No. 1½ with power feed, vertical.
Nibbling machine, Gray 30", m. d., ⅛" cap. 1½ h. p., b. b. motor.
Pipe machine, Curtis 3", motor dr.; Merrill 4"; Curtis 2½" to 12" m. d.
Planers, Gray 28"x28"x6', 1 head; Cincinnati 36"x36"x18' 2 heads; Pond, 36"x36"x12' table, 18' bed, 2 heads; Flather Gray 24"x24"x6'.
Punch presses, Bliss No. 1½ & Swaine No 63 straight side geared, Federal Nos. 1, 2, 3 and 4; Bliss No. 19; Swaine No. 37; Sidney No. 2, o.b.i.
Screw machine, Cleveland 2½" auto.; P. & W. No. 2½ hand; Foster No. 3 hand; Woods No. 2 tilted turret, Milholland No. 4 b.g. hand; Foster No. 7 hand b. g.; W. & S. No. 1.
Slotters, P. & W. 6"; N. B. P. 10" vert.
Shapers, S. M. 16"; 24"; Queen City 24" back geared; G. & E. 16", b.g.; Niles traveling head; Milwaukee 16" b.g.; Walcott 20" b.g.; S. & M. & Ohio 26" b. g.; Ohio 16", Cincinnati 20", b.g.; Rhodes 7"; Queen City 16" b. g.; Potter & J. 16".
Shears, 60" thrt. rotary slitting, (2).
Spot welders, 5, 7½, 10, and 20 k. w.
Square shears, Niagara 62" power, m. d. 18-ga.; Ohl 8' power 16 gauge.
Thread miller, Lees-Bradner No. 3E.
Turret lathes, Warner & S. No. 2A.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatics, Nos. 0 & 00 B. & S.
Grinder, 10"x36" Norton.
Grinder, No. 10 B. & S. ext.
Grinder, No. 22 Heald rotary surf.
Hobbers, Nos. 3, 12-B & C.
Lathe, No. 9 LeBlond multi-cut.
Millers, Nos. 1 & 2 Brown & Sharpe.
Miller, No. 13-B Brown & S. prod.
Radials, 3' Cincinnati Bickford.
Turret lathe, No. 6 Warner & S.

Partial list; send us your inquiries.

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street, - - - - Cambridge, Mass.

Blocks, Johansson blocks, like new.
Boring mill, No. 0 Giddings & Lewis, 3½" bar.
Boring mill, 144" Niles.
Boring mill, 96" Niles.
Boring mill, 84" Bullard.
Boring mill, 42" Gisholt.
Drill, 4-spindle Avey.
Drill, 4-spindle Leland-Gifford.
Grinder, No. 7 Gardner, like new.
Grinder, No. 27 Blanchard, 60" chk.
Grinder, No. 3 Bryant semi-auto. hole.
Hammer, 2000 and 3000 lb. new board drop, ½ price.
Hammer, 6000 lb. Sellers, steam.
Lathes, Stark, Ames bench (4).
Lathe, 14"x 6' Hendey, taper.
Miller, No. 1 B. & S. plain.
Miller, No. 1½ B. & S. plain.
Miller, No. 2 B. & S. plain.
Miller, No. 2 Cincinnati universal.
Miller, 60"x12' Newton planer type slab.
Miller, 24"x12' Ingersoll slab.
Planer, 84"x56"x16' Gray, 4 heads.
Planer, 72"x60"x16' Detrick & Harvey open side, like new.
Press, No. E-81 Ferracute knuckle joint.
Press, No. 3-A Bliss.
Radials, 3' American & Cincinnati-Bickford.
Screw machine, No. 2G B. & S.
Shaper, 15" Potter & Johnston.
Shaper, 16" Gould & Eberhardt.
Shaper, 16" Steptoe.
Shaper, 20" Milwaukee.
Shaper, 24" Stockbridge.
Shaper, 24" Milwaukee.
Slotter, 36" Newton.
Turret lathe, No. 4 Warner & S. universal, geared head.

FOR SALE BY

W. E. Brandt - - 50 Penn Ave., Pittsburgh, Pa.

Bending roll, 16'x¾" Niles, d. e.
Bending roll, 14'x1", d. e., m. d.
Bending roll, 12'x¾" Niles, d. e., b. d.
Bending roll, 11'x1" Wickes.
Bending roll, 8'x½" Bertsch initial.
Boring mill, No. 1 Cleveland.
Boring mill, 30" King.
Boring mill, 84" Poole & Niles.
Boring mill, 8' Cincinnati; 10' Pond.
Bolt cutter, 2" Landis dbl. spdl.
Brake, 10'x¼" D. & K., leaf type.
Brake, 10'x¼" D. & K., leaf type.
Brake, 10'x¼" Chicago, press type.
Forging mchc. 8" Ajax, steel bed.
Grinder, No. 16 Blanchard, A-1 chk.
Grinder, 12" P. & W., surf. mag. chk.
Hoist, 3 ton, low head, A-1.
Lathe, 32"x20' Bridgeford, g.h., m.d.
Lathe, 25"x16' Sidney, chuck, A-1.
Lathe, 24"x10' L. & S., q c g., chk.
Lathe, 20"x10' LeBlond, chuck.
Mill. mch., No. 2 Beaman & S., 2-way
Pipe mch. No. 206B Oster, 1¼-6. m.d.
Planer, 120"x60"x20' Niles, 3 heads.
Planer, 78"x78"x16' Pond, 4 heads.
Press, No. 1 B Bliss, double crank.
Press, No. 3½B Bliss, toggle.
Press, No. 31½ Bliss, open back.
Press, No. 1 Toledo, inclinable, A-1.
Press, No 116 & No. 117 Niagara.
Press, DG 55 Ferracute.
Press, No. 3A Greenerd, arbor.
Press, 650 ton Ferracute.
Press, No. 16½ Bliss horning.
Press, No. 61 Bliss, reducing.
Seamer, No. 6 Bliss auto. 14" cap.
Shear, squaring, 12'x14 ga. Peerless.
Screw mch. No. 00 B. & S. full auto.
Thread roll, No 201 V. & O.
Thread roll, No. 219 Bliss.
Turret lathe, No. 4 W. & S., A-1.
Tool holders, No. 43 Armstrong.
Vise, Boston universal, new.
Welder, 200 amp. arc. gas engine.

May we have your inquiries?

FOR SALE BY

Strafer Machinery Company,

14th and Provost St., - - - Jersey City, N. J.

BORING MILLS

100" Sellers s. p. d. rapid traverse.
96" Cincinnati s. p. d. rapid traverse.
72" Sellers rapid traverse, m. d.
51" N.-B.-P. single pulley drive.

GEAR CUTTERS

No. 6 Cincinnati 60"x20" m. d.
No. 5A. Lees-Bradner a. c., m. d.

GRINDERS.

16"x52" Landis self-contained.
16"x48" Landis crankshaft.
6"x32" Norton, overhead counter.
No. 8 Badger disc, 30" wheel.

KEYSEATERS.

No. 5 Mitts & Merrill belt drive.
No. 3 Mitts & Merrill 16" stroke.

LATHES.

42"—70"x16' Fay & Scott slide gap.
24"x18' Prentice g. h.
42"x14' Bridgeford geared head.
21" Gisholt turret lathe.

PRESSES.

400 ton W. S. hydraulic 73"x20'.
No. 3½ Bliss double crank, 44".
No. 4½ Bliss double crank, 22".
Ferracute s. r. g. 103 geared.
No. 87 Zeh & Hahneman grd. arch.
S-134 Ferracute 82" bet. uprights.

MISCELLANEOUS.

Beading machine, Bliss.
Bending rolls, 10'x¼" drop end, m.d.
Boring bars, portable, 4"x8'.
Caterpillar ditcher, B. & G. 24"x8'.
Chuck jaws set for boring mill.
Compressor, L.-R. 8"x6" horiz. m.d.
Pipe machine, 6" Saunders with dies.
Wire straightener, core, to 5/16".

FOR SALE BY

The Davis Machinery Company, 1-3-5 So. St. Clair St., Toledo, Ohio

Bolt threader, ¾" Landis dbl. head.
Boring mill, 24" Bullard vertical.
Drill, 3' Bickford radial, g.b., s.p.d.
Drill, Henry & Wright, h. s. b. b.
Drill, Sipp h. s. b. b. (2).
Drill, No. 2 Avey, h. s. b. b.
Drill, 2-spindle, L. & G. h. s. b. b.
Drill, 24" Cincinnati s. h., b. g., p.f.
Drill, 6-sp. Nat. Acme horizontal.
Drill, 6-spdl. H. & W., h. s., b. b.
Grinder, No. 2 Gardner disc, comp.
Grinder, No. 4 Gardner disc comp.
Grinder, No. 4 Gardner disc, 15 h. p. motor drive.
Grinder, No. 14 Brown & S., plain.
Grinder, 10"x36" Landis pl. self-con.
Grinder, No 60 Heald cylinder.
Grinder, No. 2 Oakley univ., comp.
Hack saws, 6x6 Racine & Peerless.
Keyseater, No. 0 Baker.
Keyseater, No.3-A Mitts & Merrill.
Lathe, 19"x10" Sidney q. c g.
Lathes, 14"x6', 16"x6', 16"x8' Hendey q.c.g., taper and collet attachment.
Lathe, 16"x6' Walcott q. c. g. t. att.
Lathe, 16"x8' South Bend, std. c. g.
Lathe, 16"x8' Oliver q. c. g , engine.
Lathe, engine, 18"x7' Lehmann, q. c. g., chuck.
Lathe, 18"x10' American q. c. g., taper and relieving attachments.
Lathe, 18"x8' American q. c. g.
Mill, No. 1 Kempsmith universal.
Mill, No. 2 LeBlond univ. index & vertical head. complete.
Mill, No. 3 LeBlond, univ., comp.
Mills, No. 1½, No. 2 and No. 3 Cincinnati plain, all geared feeds.
Mill, No. 2 Kempsmith plain.
Mill, No. 0 Steptoe, p. f.
Mill, A. B. Becker vertical.
Milll, Model C. Becker vertical.
Mill, No. 3 B. & S. vertical, s. p. d.
Mill, No. 6 Whitney hand, (6).
Miller. No. 1 Toledo b. b. hand (2).
Nibbler, metal No. 1 Campbell.
Oil groover, Fisher No. 1.
Press, No. 1 Toledo o. b. i. flywheel.
Press, No. 3 Bliss, s. b., flywheel.
Press, No. 4 Amer. Can type P.
Press, No. 8 Bliss, bench type (5).
Press, No. 81 Consolidated. bench.
Press, 40 ton Manhattan screw
Screw machine, No. 6 Warner & S.
Screw machine, No. 7 Foster.
Screw mche., ¾" Cleveland Model A.
Screw mche., 1¼" Cleveland Model A.
Shaper, 16" Whipp crank, s. g.
Shaper, 16" & 20" Cin. crank b. g.
Shaper, 16" & 20" Steptoe crank b.g.
Shaper, 20" Ohio crank, b. g.
Shaper, 24" Smith & M. crank. s.p.d.
Shaper, 24" Walcott crank, b. g.
Tappers, No. 1 & No. 2 X Garvin vertical (5).
Threader, ¾" Geometric.

FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Drills, 10", 14", 16", 20", 26" & 34".
Drills, Pratt & Whitney 4-spindle multiple, adjustable.
Filing machines, Oliver & Hartford.
Grinders, 8" Heald rotary, No. 3 Brown & Sharpe universal.
Lathes, 9x12 Porter - Cable, 15x8 Carroll-Jamieson q. c. g.; 18x6 Rahn-Larmon; 22x12 Lodge & S. d. b. g., q. c. g.; 24x10 Lodge & Shipley q. c. g.; 30x14 Bradford.
Milling machines, No. 2 Cincinnati univ.; No. 3 Carter & Hakes; No. 0 Bristol & U. S hand.
Punch presses, No. 31 Swaine o. b. i.; No. 19 Bliss o. b. i.; No. 33 Swaine o. b. i.; No. 92-A Toledo.
Screw machines, No. 0 B. & S. automatic; No. 0 B. & S. semi-auto.; No. 1-B Foster; No. 56 National-Acme; 4-spindle Gridley 1¼"; No. 4 Wood tilted turret.
Spot welder, National 25 k. w., 27" throat.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Drills: 24", 26" and 32" Barnes and Rockford; 4-spindle Moline hole hog No. 66D.
Gear hobbers, G. & E. 12" and 24".
Grinders: No. 6 Besly dbl. spindle; No. 220 Badger auto. disk; 12x30" Modern, plain s. c. c. s.; No. 12 Brown & Sharpe, universal, tool.
Hammer: 40 lb. Bradley, helve; 50 lb. Mayer upright.
Lathes, 30" x 12' Blaisdell; 26" x 12' Putnam, hvy. duty; 20"x12' Lodge & Shipley, q. c. g.; 18"x8' Prentice geared head; 16"x8' Lodge & Shipley q. c. g.; 16"x6' Monarch.
Millers: No. 2 Hendey-Norton, univ.; No. 3½ Fox; No. 4 Hendey Lincoln.
Press, No. 7 Zeh & Hahneman.
Punch, Cleveland C ⅞ in ⅞"; Rock River Style L ½" in ½".
Threaders: ⅝" Geometric; National 1¼" double hd.; No. 734 Greenfield.

Write for prices; send us your inquiries for shop equipment and sheet metal working machinery. We have the stock.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

BORING MILLS.

24" and 36" Bullard New Era.
36" and 51" Niles, 2 hds. $425 & $850.
2½" Cleveland horiz., rot. tbl. $1250.

DRILLS AND RADIALS

6' American, gear box, sgl. pul. $1000.
4' Morris, single pulley..... 775.
No. 5 Fox mult spdl. 32"x45"...$1250.
No. 310 Baker heavy duty

LATHES.

60"x16' New Haven.....$1050.
36"x22' New Haven, blocks to 44" ..... 675.
30"x14' Prentice q. c.
26"x48"x10' McCabe dbl. sp... 725.
19"x12' Sidney q. c.....$ 685.
18"x8' Mueller, q. c..... 390.
17"x8' LeBlond, q. c..... 500.
13"x5½' Willard, geared head.
14"x6' Bradford, q. c.

MILLING MACHINES.

No. 2 Cincinnati univ., cone...$ 775.
No. 2 Cinti. vert., sgl. pulley.. 1050.
No. 4 Cinti. vert., sgl. pulley... 975.
No. 3 Cincinnati pl. sgl. pulley 950.
No. 4 Cinti. univ. knuckle-joint vertical attachment.....$ 975.
No. 4 Becker-Brainard, cone. 675.
No. 4 Brown & S. plain, late.

PLANERS AND SHAPERS.

26"x26"x10' Gray, 1 head.....$ 375.
36"x12' D. & H. openside, 3 hds. 1250.
48"x10' Belmer, 4 heads..... 950.
32"x20' American, 2 heads.....$ 350.
34" Gould & Eberhardt, b. g... 975.
24" Potter & Johnston, b. g.... 700.

MISCELLANEOUS.

Automatic, No. 2-G B. & S ...$ 465.
Grinder, B. & S., planer type.. 325.
Pipe mchs, Curtis & Curtis 12" 575.
Presses, No. 152 Toledo dble. crank, 13,000 lbs..... 800.
Shear, 36" Niagara power, No. 10 ga.
Slotter, 20" Dill, motor drive...$1350.
Turret lathes, 6" Gisholt, mtr. drive ..... 775.

FOR SALE BY

J. Bleser Mfg. Co., - - 16th & Madison St., Springfield, Illinois

Grinder, Micro cylinder.
Lathes, Rivett bench full equip.
Lathe, Prentiss 25"x16', s. c. g.
Lathe, 25x10 Lehmann q. c.....$675.
Lathe, 16x10 South Bend m. d... 375.
Lathe, 11x4 South Bend.....$150.
Miller, Transit heavy duty.
Millers, No. 3 Burke, Rockford.
Pipe machines, 2", 4", 6" and 8".
Shapers, Smith & Mills, 16" and 12".

FOR SALE BY

Lake Machinery Co.
1140 W. Lake St., HAYmarket 5896 Chicago, Ill.

Boring mill, 30" Bullard.
Grinder, Walker 12" rotary magnetic surface.
Lathe, American 24"x10' & 24"x12', q. c., double back geared.
Lathe, L. & S. 30"x16' q. c., d. b. g.
Planer, 36x36x10 Gray, 2 heads on cross rail.
Radial drill, 4' American.
Shaper, 24" Gould & Eberhardt crk.
Also numerous other items at reasonable prices.

FOR SALE BY

B. L. Saltzman - .524 W. Van Buren Street, Chicago, Ill.

Brake, 8', 16 gauge.
Crane, floor, 2 ton Canton.
Grinder, surf., No. 2 LaSalle mag. ck.
Lathes, polishing, ball bearing.
Screw press, No. 87 Niagara.
Shear, sq., power, 30", 14 gauge.
Shear, sq., foot 30".
Shear, sq., foot 22".
50 h. p. Type H. H. intermittent duty, crane service, or similar use, 720 r. p. m. (one new and one used).
30 h. p. Type HV continuous duty, 900 r. p. m. (one new, one used).
Above motors Fairbanks-Morse slip ring, dbl. shaft, ball bearing, 3/60/440.

FOR SALE BY

A. D. White Machinery Co., 108 N. Jefferson St., Chicago, Ill.

Automatic, Gridley 4-spindle, 1¼" and 2" motor drive.
Automatic, Cleveland ¾"-4" model A, rebuilt, (2).
Bolt cutters, 3½" and 4" Acme, single head, rebuilt.
Drills, 3-spindle Allen and Henry & Wright ball bearing.
Drills, 6-spindle Allen ball bearing, 220 volt 60 cycle motor.
Drills, 26" Barnes back geared, sliding head.
Grinder, 6"x32" Norton plain cylindrical, very good.
Grinder, 14"x72" Norton plain cylindrical.
Grinder, Oesterlein tool & cutter, 440 volt, 3 phase, 60 cycle motor.
Hammer, 60 lb. Bradley cushion helve.
Miller, No. 1½B Kearney & Trecker vertical, with rotary table.
Miller, No. 6 Becker vertical, with rotary table.
Miller, No. 24 Cincinnati automatic, 220 volt, 3 phase, 60 cycle motor.
Miller, No. 4 Cincinnati 36" hydromatic, motor drive, used 5 days.
Planer, Cincinnati 24"x6' Tu-Speed.
Press brake, 6' Cincinnati, 10 ga. with motors, excellent.
Press brake, 8' Cincinnati, 12 ga. with motors, excellent.
Presses, 12 No. 5 Loshbough-Jordan inclinable, geared.
Presses, 2 No 90 Toledo double crank, 4" stroke.
Presses, No. 75½ Bliss straight side, geared, 4" stroke.
Presses, No. 78½ Bliss straight side, geared, 12" stroke. tie rod frame.
Presses, No. 426½ Hamilton double crank, 8" stroke, with a. c. motor.
Punch and shear, Pels combination No. 10, with built-in coper.
Screw machine, hand, No. 3 & 4 Bardons & Oliver, several of each.
Screw machine, hand, No. 2 Foster, one plain head, other geared, rebuilt.
Also complete outfit for deep drawn sheet metal, with toggle presses, from 10000 lbs. to 34000 lb. in weight, and other machines.

High Grade Machine Tools

Lathes

54"x24' H. S. & G. Grd. Hd. M. D.
42"x24' American Grd. Hd. late type.
24"x22' Bradford, cone drive.
26"x18' American, Q. C.
46"x18' N. B. P., Qk. Ch., H. D.
46"x16' H.S.& G.Grd. Hd., late type
24"x15' Lodge & Shipley, Q. C. G.
36"x14' Lodge & Shipley, Q. C.
20"x8' Am. Grd. Hd., M. D., late t.
30"x10' Lodge & Shipley, 3 S. C. D. D. B. G. Q. C.
18"x8' Reed-Prentice Grd. Hd. Q. C.
16"x6' Lodge-Shipley Sel. Grd. Hd.
14"x6' Hendey Yoke Hd., late type.

Grinders

Nos. 50, 60, 65 and 70 Heald.
6"x18" Landis Plain, Self Contained.
No. 11 Brown & Sharpe Plain.
10"x52" Landis Plain, Self Con.
No. 2 B. & S. Surface Grinder.
12" Pratt & Whitney Surface.
Nos. 2 & 2½ Bath Universal.
No. 13 B. & S. Universal Tool Room Grinder, complete equipment.
No. 3 Ohio Universal & Tool.
16"x68" Landis Self Cont. Crankshaft.

Gear Cutters

No. 0 Schuchart & Schutte Hobber.
No. 12 Barber-Colman Hobber, dbl. overarm, late type.
18-H Gould & Eberhardt Hobber.
6", 11", 18" Gleason Gear Generators.

Bolt and Pipe Threaders

¼" Landis Double-Spindle.
1½" Landis Sgl.-Sp., Grd. Hd. m. d.
1" Acme Class "A" Single-Spindle.
2" Landis Sgl.-Sp., lead screw attach.
2" Landis Double-Spindle.

Boring Mills

34" Gisholt Vertical one turret head.
48" Colburn Vert. 2 sw. hds., late type.
60" Bullard Vertical 2 hds., S. P. D.
60" Niles Boring Mill, 2 heads.
No. 32 Giddings & Lewis Horiz.

Milling Machines

No. 5 Brown & Sharpe Plain.
No. 4 Cincinnati, Plain.
No. 4-B Milwaukee Plain; Dbl. Overarm; motor-in-base; 98% new.
No. 3 Cincinnati, Plain.
Nos. 3; 5-B; 6 Becker Vertical.
No. 3 Cincinnati Vert. H. P., S.P.D.
Nos. 2 and 3 Cincinnati High Power Plain. S. P. D. flange nose.
No. 2 Cincinnati Universal H. P. flange nose: S. P. D.
No. 1½-B Milwaukee Universal, Double Over-arm; S. P. D.
5" Pratt & Whitney Automatic.
18" Cincinnati Automatic, M. D.
24" Cincinnati Automatic, M. D.
No. 33 Kempsmith Automatic.
No. 3 Rockford Rigidmil; 98% new.
No. 30 Sunstrand Rigidmil; Hydraulic Feeds; brand new.
No. 7-H Becker Lincoln type.
No. 1 Knight Miller and Driller.
No. 3 & 3-E Lees-B. Thread Millers.

Planers

24"x24"x8' Gray Planer.
27"x27"x8' Woodward & Powell.
36"x36"x10' Gray, 2 heads.
26"x26"x12' Whitcomb-B., 2 heads.

Radial and Upright Drills

5' Bickford Univ. S. P. D. gear box.
4' & 3' Cincinnati-Bickford, S. P. D.
3' & 4' American Tr. Grd. SPD, MD
4' American Tr. Purpose, late type.
No. 2 Colburn Mfg. H. D. 2-spindle.
3-sp. Avey High Speed Ball Bearing.
6-spindle Rockford 20" B. G. P. F.
No. 30 Natco Multiple Spindle.
No. 40 Natco Straight Line Multi.

Shapers

16" and 20" Gould & E. High Duty.
16" & 20" Stockbridge, Motor Drive.
20" Steptoe, S. P. D.
24" Gould & Eberhardt; High Duty.
24" Queen City heavy duty, cone dr.
24" Cinti. h. d. mtr. dr. thru gear box.

Miscellaneous

No. 3 J. N. LaP. Broaching Mche.
80 lb. Bradley Cushion Helve Hammer
Nos. 0 and 3 Baker Keyseaters.
Nos. 1 & 2 Davis Keyseaters.
No. 42 Toledo Horning Presses.
No. 21 Bliss O. B. Incl. Presses.
No. 5 Toledo O. B. Incl. Presses.
No. 56 Adriance Dbl. Cr.Str. S. Press.
No. 76 Toledo Open Bk. Gap Frame.
Wickes Punch & Shear, 48" throat, 1¼" thru 1¼"
High Spd. Rivet., 1AA; 1½B; 2AHD.
No. 2 Garvin Vertical Tapper.
No. 2-A W. & S. Turret Lathes.
No. 4 W. & S. Univ. Turret Lathe.
No. 1-B Foster Univ. Tur. Lathe m. d.
100 K. W. Federal Butt Welder.
Shuster Wire Mches. ⅛" to ⅜" Capts.

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Cincinnati Machinery & Supply Co., 28 West Second St., CINCINNATI, OHIO

Bigger and Better Bargains

Every tool listed a good buy

LATHES

42"x24' Pond face plate dr.	$ 685.	15"x8" Cisco q. c. ck.	$ 225.
35"x19' Pond face plate dr.	500.	14"x6' Mulliner q. c. tap. att.	395.
20"x8' Taylor q. c. hvy. pat. ck.	350.	14"x6' Flather q. c. (2)	325.
18"x8' Cincinnati taper att.	325.	14"x6' Monarch q. c. dbl b. g. (2)	210.
18"x8' Hendey, yoke head	675.	14"x6' Walcott, q. c. taper att.	225.
17"x9' LeBlond crank shaft (2)	285.	12"x5' Hendey q. c. yoke hd.	350.
16"x6' Bradford q. c. tap. att.	350.	9"x12" Sundstrand grd. hd. (2)	125.

MILLING MACHINES

No. 2 Rockford, late, s. p. d.	$ 600.	No. 2 Cincinnati plain, p. f. (2)	$ 200.
No. 1B Kearney & T. s. p. d.	450.	No. 12 B. & S. production, (2)	225.
No. 3 LeBlond plain, dbl. b. g.	425.	30"x30"x12' Ingersoll hor. sp.	675.
No. 2½ LeBlond pl. with div. hd.	350.	7H Lincoln type production (2)	125.
No. 1½ American plain	250.	No. 4 Garvin Vert. profilers (2)	250.
Kent Owens Hand b.	125.		

BARGAINS Becker Vertical Milling Machines BARGAINS

No. 6 Becker Vert. late type	$ 600.	No. 5 Becker Vertical	$ 325.
No. 6 Becker Vert. in gd. cond.	375.	No. 5B Becker Vertical	175.

Model C, Late type, excellent condition $475.

DRILL PRESSES

28" Cincinnati sl. hd., d. b. g.	$ 200.	4-spl. Barnes 20" all geared	$ 385.
26" Prentice, s. h., single p. d.	275.	No. 2 Fox 8-sp. Multiple, m. d.	350.
4-spl. Allen ball bearing	425.	12. 15 & 20-spindle Moline Rail Drills, No. 5 M T.	750.
4-spl. Superior b. b. ½" cap.	475.	4' & 5' Pond Radials	485.
4-spl. Kern b. b. ½" cap.	375.	4' Fosdick Holloway Radial	475.
6-spl. Kern b. b. ½" cap.	400.		

SCREW MACHINES

No. 4 B. & S. Turret Lathe	$ 525.	4½" Gridleys 1-spdl. automatic	
No. 2A Warner & S., tap. att.	375.	No. 6A Potter & Johnson Ser. No. over 18000 (2) ea.	$ 550.
No. 3 Warner & S. Uni. Brass.	325.		
No. 4 Warner & S., collets	250.	1½" cap. Woods Tilted Turret	225.

GRINDERS

6"x32" Norton Plain (2), each	$ 275.	No. 70 Heald Int., comp. (2)	$ 550.
6"x18" Landis s. p. d. late type	475.	No. 6 Rivett Internal	375.
24"x24"x6' Pond Pl. type Surf.	450.	Capital Internal	250.
12"x40" Pratt & Whitney Surf.	750.	No. 2 Union Cutter Forming	325.
No. 2 B. & S. Surf., hand feed	275.	No. 1 Greenfield Cylindrical	225.
36" Hanchett Knife Motor	275.		

SHAPERS

24" Hollingworth	$ 495.	16" Hamilton heavy patern	$ 350.
24" American, heavy duty	550.	16" Smith & Mills	175.
16" Gould & E. Hi Duty	425.	16" Barker	150.
16" Cincinnati s. p. d.	450.		

MISCELLANEOUS

No. 6 Fellows Gear Shaper	$ 250.	1" Acme Stud Threader	$ 350.
60" B. & S. Gear Cutter	900.	No. 14 Higley Cold Saw 7"	200.
2" Robbins Pipe Mch., m. d.	175.	6"x6" Marvel Hi Speed Hack Saw	100.
2" Williams Pipe Machine	175.		
No. 2 & 2X Garvin Tappers	175.	6"x6" Peerless Hack Saw	75.

THE TOLEDO MACHINERY EXCH. CO.

18 North St. Clair St., Toledo, Ohio

Unusual Machine Tool

1—Practically New 42" Widened to 54"x42" High x16' Table G. A. Gray Company's Maxi Service Planer with two heads on cross rail, with side heads on front and rear housing, with table widened to 50", direct connected motor drive with 25 HP, 230 volt, direct current reversing motor with General Electric rheostat controller complete with 3 HP Louis-Allis 440 volt, 3 phase, 60 cycle motor for rapid traverse, elevating rail, etc. complete with 21 KW General Electric D. C. generator—Type CD-25, 250 volt, 1750 RPM direct connected to a General Electric 30 HP, A. C. motor wound for 440 volt, 3 phase, 60 cycle. This machine has not had six months' actual use.

No. 2-A Milwaukee Plain Constant Speed Drive Milling Machine, belt drive.

No. 4-B Heavy Plain Brown & Sharpe Plain Constant Speed Drive Milling Machine, taper nose spindle, rapid traverse, belt drive.

No. 5-B Heavy Brown & Sharpe Plain Constant Speed Drive Milling Machine, taper nose spindle, rapid traverse, belt drive.

3' Arm American Enclosed Head Plain Arm Radial Drill Drill with tapping attachment, gear box belt drive, with plain box table.

This covers but a small part of our stock of used tools. Please

The Strong, Carlisle

1394 W. Third St., Cleveland, Ohio

Values—Fully Guaranteed

4' Arm Cincinnati-Bickford Single Pulley Drive Gear Box Plain Arm Radial Drill with tapping attachment, belt driven, with plain box table.

4' Arm Hammond High Speed Sensitive Radial Drills, with tapping attachment, motor driven complete with motors (11).

No. 30 Natco Multiple Spindle Drill with 22"x38" head bored for 34 and equipped with 27 spindles, with 42" diameter round indexing table, motor driven complete with 25 HP motor.

No. 30 Natco Multiple Spindle Drill with 26" round head equipped with 24 spindles, motor driven complete with motor.

No. 14 Natco Multiple Spindle Drills with 16"x24" head bored for 22 and equipped with 12 spindles, arranged for motor drive complete with motor, (2).

No. 13 Natco Multiple Spindle Drill with 12"x18" head bored for 22 and equipped with 8 spindles, with box table, motor driven complete with motor.

No. 217 Baker Heavy Duty Single Spindle Drills motor driven, each complete with 10 HP, 440 volt, 3 phase, 60 cycle motor, (7).

26" Libby, Type "C" Heavy Duty Turret Lathes, motor driven complete with motors, (3).

end us a list of your requirements or write for our complete list.

& Hammond Co.,

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PRESS BRAKE: Loy & Nawrath, cap. 8' ¼", Motor Drive Tie Rod.
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UPSETTERS: NATIONAL HEAVY DUTY, Late Type, 1½" & 2".
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HAMMERS: Bradley Upright—50, 100, 150, 200, 300 and 500 lb. Bradley Cushioned Helve—40, 60, 80, 100 and 200 lb. Board Drop, all sizes and Chambersburg 2500 lb. Late Type H.
SHEARS, Bar Shears, 1½", 2½", 3¼" & 5" round. 1½" & 2" Alligator.
PRESSES: Straight Sided—52A Waterbury with 8 hole dial. 37½ Bliss, 6" stroke. No. 2 Billings & Spencer Trimming. Solid Back—No. 3 and No. 4 Stiles. No. 16 Bliss Horning. Inclinable—No. 16 Stoll. No. 6 Adriance. No. 5 Consolidated, Stoll Inclinable Geared, Motor Drive 4" Stroke, 8100 lbs. Assortment of Inclinable Presses from No. 1 to No. 6.
PUNCHES: Rock River 16" throat, cap. 1" through 1". E. F. Cleveland, 24" throat, 1¼" through 1". No. 2 Hilles & Jones, 20" throat, 1" through ¾", rapid action. Long & Allstatter, 48" throat, 2¼" through 1". Williams & White No. 14, 1¼" through 1", plane tbl.; Pels Triple Combination Punch Bar and Angle Cutter.
PUNCH AND SHEAR: Triple Combination, No. 1 Buffalo Universal.
THREADING MACHINES: 1 and 2 Spindle Acme and Landis. Single and Double Spindle with and without lead screws, ½", 1", 1½", and 2"; Landis 3" Lead Screw.
POINTING AND THREADING MACHINES: Economy.
THREAD ROLLERS: ⅜", ½" and 1" capacity.
NIPPLE THREADER: Landis 2" 2-spindle, m. d.
PIPE THREADERS: Landis 6"; Saunders 4"; Jarecki 6".
COLD HEADERS: Single and Double Stroke, Open and Solid Die.
COLD PUNCH NUT MACHINES: ¼", ⅜", ½", ⅝".
BOLT TRIMMERS: Bolt Headers, Bolt Pointers, Nut Tappers, Hammer Headers, and Hot Pressed Nut Machines.
NUT TAPPERS, 6 and 8 spindle National and Acme ½" to 1½".
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No. 3 Kempsmith	500.
No. 3 LeBlond	450.
No. 3 Cincinnati	500.
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1—18x10 Hendey.
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1—16x6 American.
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1—44" Bar N-B-Pond Horizontal.
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20" Columbia Hvy. Duty B. G. Crank.
20" S. & M. H. D., B. G. Crank s. p. d.
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14" Pratt. & W. Vert. Surf., rot. chuck.
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84" Diamond H. D. Face, arr. for m. d.

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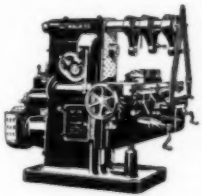

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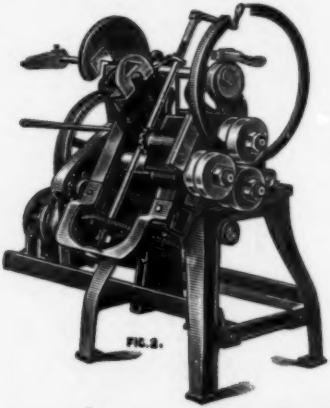

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